REVISION OF THE SOUTHERN AFRICAN ANTHURIDEA (CRUSTACEA, ISOPODA)

By

Brian Kensley

Smithsonian Institution, Washington, D.C.

(With 64 figures)

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ABSTRACT

The South African anthuridean isopod fauna, which includes thirty-seven species in sixteen genera and two families, is reviewed. Full synonymies, diagnoses, and all available material examined have been included for each species. The following new species have been described: *Haliophasma austroafricana*, *Malacanthura schotteae*, *M. transkei*, and *Mesanthura dimorpha*.

The following nomenclatural changes have been made: *Natalanthura foveolata* is placed in the genus *Apanthuroides*; *Haliophasma caecus* in *Centranthura*; *Exanthura filiformis* (*sensu* Barnard), and *E. macrura* in *Haliophasma*; *Horoloanthura capensis* in *Kupellonura*; *Haliophasma coronicauda*, *H. foveolata*, *H. hermani*, *H. ornata*, *H. pseudocarinata*, and *Agulanthura serenasinus* in *Malacanthura; Anthelura remipes* in *Quantanthura*; and *Zulanthura laevitelson* in *Accalathura*.

The distribution patterns of the southern African anthurideans are compared with those of other geographical areas.

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INTRODUCTION

Between 1925, when Barnard summarized the knowledge of anthuridean isopod systematics, and the early 1970s, no major study of the group has appeared. At present, however, there are several workers concentrating on the group, which is consequently approaching some degree of generic stability. Because of Barnard's interest in the anthurideans and because of much subsequent collecting, the southern African area is now represented by thirty-seven species, more than any other region in the world. It was thus felt that a systematic review of the southern African anthurideans would be useful, especially in updating generic and specific diagnoses.

For this study, the entire holdings of the South African Museum and the University of Cape Town's Department of Zoology have been examined, as well as some material in the British Museum of Natural History, the Smithsonian Institution, the Muséum National d'Histoire Naturelle, Paris, and the Zoological Museum, Copenhagen. Also included is material from the 1978 and 1979 *Meiring Naude* cruises of the South African Museum.

Full synonymies are provided for each species. Full descriptions of new or poorly-known species are given; for species already well documented, only a diagnosis containing the species' most distinctive features is given. The material examined has been divided into two sections, viz. type material and other material. For a few species the whereabouts of the types are unknown. Those described by Stimpson from the United States North Pacific Exploring Expedition, collected in False Bay, Cape, are presumed to have been lost in the Chicago fire of 1871 (see Rathbun 1907). Localities, along with depth records where known, are given for all material.

Keys to families, genera, and species have been constructed for ease of use, and do not necessarily use phylogenetically significant features.

In the *Material* sections, distinction is made between ovigerous and non-ovigerous females, mature males (bearing whorls of filiform aesthetascs on the antennular flagella), submales (representing a stage in the protogynous development from female to male, and recognized by the lack of antennular aesthetascs), juveniles, and mancas (the latter having not yet developed the seventh pair of pereopods).

For most of the species, a figure of the entire animal (usually a mature female) is provided, plus line figures of the most significant features. In addition, scanning electron micrographs have been used to illustrate some details. Occasionally, a feature may be illustrated both by line drawings and SEMs. In such cases, the SEMs are regarded as essential for interpretation of fine surface detail, as well as for three-dimensional configuration and orientation. It is felt that an abundance of figures, especially SEMs, will give a better understanding of functional morphology of the group, and cast light on aspects of adaptive radiation and phylogeny.

The present treatment of the southern African Anthuridea is certainly not the final word, as the author has examined material that has not been included.

For example, an undescribed species of *Mesanthura* from Lüderitz (represented by a single specimen), and several immature or damaged specimens from the continental shelf off the east coast have been omitted. Only with more specimens can this material be adequately described. Reinterpretation of some genera and species (e.g. *Apanthura* and *Leptanthura*) will almost certainly become necessary.

The following abbreviations are used throughout the paper:

BMNH	British Museum (Natural History)
SAM	South African Museum
SIO	Scripps Institution of Oceanography
USNM	United States National Museum of Natural History, Smithsonian Institution
ZMC	Zoological Museum, Copenhagen
juv.(s)	juvenile(s)
ovig.	ovigerous
TL	total length

All locality references to False Bay refer to False Bay, Cape, and not False Bay, Natal. In the sections *Other material*, all localities are given from west to east.

SYSTEMATIC DISCUSSION

KEY TO THE FAMILIES OF THE ANTHURIDEA

1. Mouthparts adapted for biting and cutting, i.e. mandible possessing (usually) molar and incisor, maxilla with several distal spines ..... Anthuridae
– Mouthparts adapted for piercing and sucking, i.e. mandible lancet-like, lacking molar and incisor, maxilla styliform ..... Paranthuridae

KEY TO THE SOUTH AFRICAN GENERA OF THE FAMILY ANTHURIDAE

1. Pleonites 1–6 free 2
– At least pleonites 1–5 fused 4
2. Pleonites 1–6 free-elongate
Exopod of pleopod 1 non-operculiform 3
– At least pleonites 1–5 free, short
Exopod of pleopod 1 operculiform ..... *Panathura*
3. Telson dorsoventrally flattened
Maxilliped of 5 segments ..... *Kupellonura*
– Telson spiniform, terete
Maxilliped of 7 segments ..... *Neohyssura*
4. Maxilliped of 6 segments ..... *Quantanthura*
– Maxilliped of fewer than 6 segments 5
5. Maxilliped of 5 segments 6
– Maxilliped of fewer than 5 segments 9
6. Persistent brown-black dorsal pigment pattern present ..... *Mesanthura*
– Persistent pigment pattern absent 7
7. Pereopods 1–3 subsimilar, barely subchelate
Molar of mandible absent on one side ..... *Apanthuroides*

– Pereopod 1 subchelate, markedly larger than following pereopods
Molar of mandible normal, present on both sides 8
8. Pereopods 4–7 with triangular carpus ..... *Apanthura*
– Pereopods 4–7 with rectangular carpus ..... *Malacanthura*
9. Maxilliped of 4 segments 10
– Maxilliped of 3 segments ..... *Centranthura*
10. Pereopods 4–7 with triangular carpus ..... *Cyathura*
– Pereopods 4–7 with rectangular carpus ..... *Haliophasma*

Family **Anthuridae**

Apanthura Stebbing, 1900

Diagnosis

Antennular flagellum of two to four articles; antennal flagellum of two to four articles. Mandible with three-segmented palp; incisor, lamina dentata, and molar present. Maxilliped five-segmented, endite present or absent. Pereopod 1 subchelate, propodus expanded. Pereopods 4–7 with triangular carpus underriding propodus. Pleopod 1 exopod operculiform. Pleonites 1–5 fused, pleonite 6 free. Telson with two basal statocysts.

Type species

Apanthura sandalensis Stebbing, 1900.

KEY TO THE SOUTH AFRICAN SPECIES OF *APANTHURA*

1. Uropodal exopod strongly notched ..... *dubia*
– Uropodal exopod margin entire, convex or sinuous 2
2. Eyes present; telson with distal raised lozenge-shaped area ..... *africana*
– Eyes absent; telson with faint mid-dorsal ridge ..... *insignifica*

Apanthura africana Barnard, 1914

Figs 1–2

Apanthura africana Barnard, 1914: 340*a*, pl. 28C; 1925*a*: 142; 1940: 490, 498. Nierstrasz, 1941: 241. Day, Field & Penrith, 1970: 47. Kensley, 1975*a*: 38; 1978*a*: 46, fig. 20G–I.
Apanthura cf. *sandalensis:* Penrith & Kensley, 1970: 226.

Diagnosis

Integument lacking sculpture. Pereonites 4–6 each with mid-dorsal pit. Pleonites 1–5 fused, dorsal lines of fusion complete between pleonites 1–4, incomplete between pleonites 4 and 5; pleonite 6 free, with mid-dorsal notch in posterior margin. Telson slightly raised, lozenge-shaped in distal half; distally rounded. Pereopod 1 propodus expanded; palmar margin setose, with low rounded lobe at midpoint. Uropodal exopod with outer margin slightly sinuous distally.

Type material

Holotype, non-ovig. ♀, SAM–A63, 17,0 mm, off Saldanha Bay, 160 m.

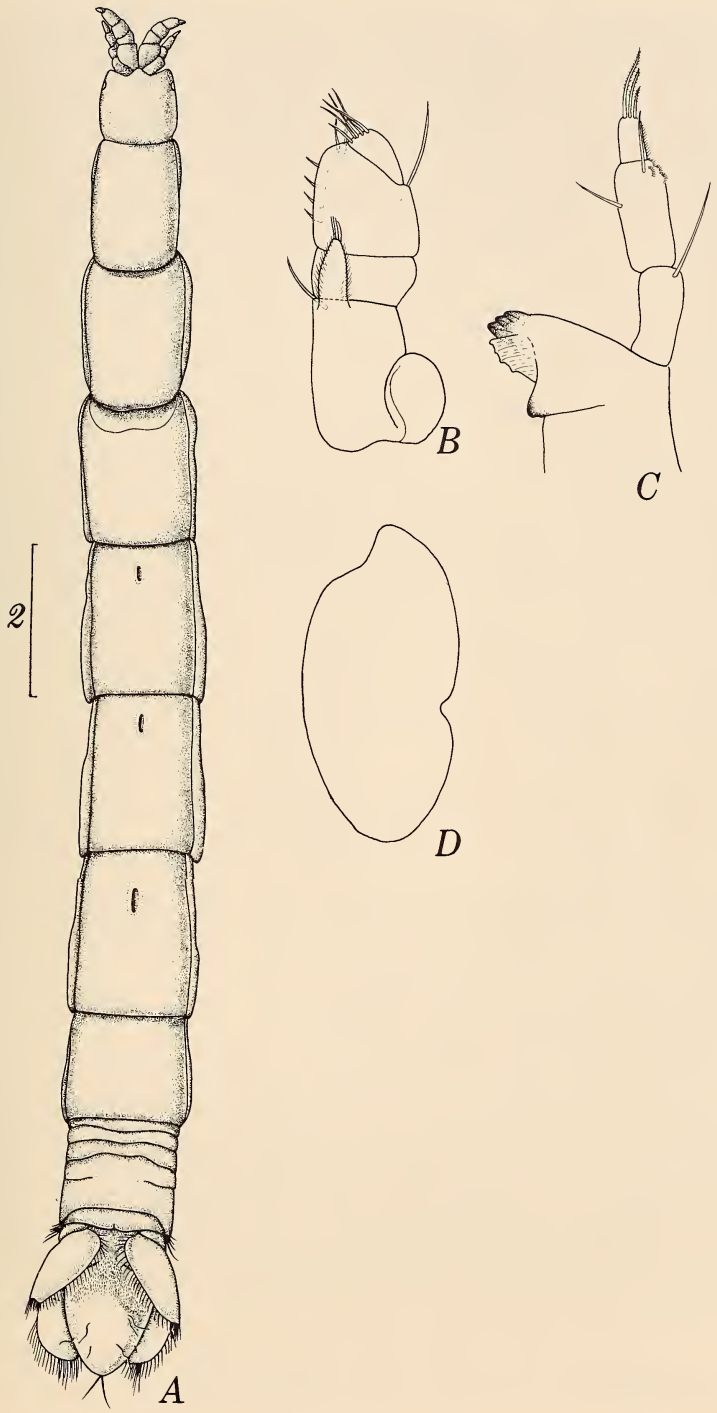

Fig. 1. *Apanthura africana*. A. ♀, dorsal view. B. Maxilliped. C. Mandible. D. Uropodal exopod. Scale in mm.

Other material

SAM–A12615, 2 non-ovig. ♀, Lüderitz, intertidal. SAM–A12630, 1 juv., Lüderitz, intertidal. SAM–A12739, 3 juvs, Lüderitz, intertidal. SAM–A5961, 1 ♀, off Saldanha Bay, 174 m. SAM–A14040, 1 non-ovig. ♀, off Saldanha Bay, 16 m. SAM–A14046, 1 sub♂, off Saldanha Bay, 146 m. SAM–A14047, 1 non-ovig. ♀, off Saldanha Bay, 148 m. SAM–A14048, 1 sub♂, 1 non-ovig. ♀, off Saldanha Bay, 79 m. SAM–A14052, 1 sub♂, 27 non-ovig. ♀, 13 juvs, off Saldanha Bay, 11 m. SAM–A14053, 4 juvs, off Saldanha Bay, 91 m. SAM–A14054, 1 non-ovig. ♀, off Saldanha Bay, 172 m. SAM–A14055, 6 non-ovig. ♀, 12 juvs, off Saldanha Bay, 146 m. SAM–A14056, 1 sub♂, 4 non-ovig. ♀, 4 juvs, off Saldanha Bay, 142 m. SAM–A14057, 1 non-ovig. ♀, off Saldanha Bay. SAM–A14067, 2 ♂, 4 non-ovig. ♀, 13 juvs, off Saldanha Bay, 146 m. SAM–A14113, 1 non-ovig. ♀, off Saldanha Bay, 13 m. SAM–A14118, 3 non-ovig. ♀, 2 juvs, off Saldanha Bay, 15 m. SAM–A14325, 1 non-ovig. ♀, off Saldanha Bay. SAM–A14326, 1 ♂, off Saldanha Bay. SAM–A14327, 1 sub♂, 1 non-ovig. ♀, off Saldanha Bay. SAM–A14348, 1 non-ovig. ♀, off Saldanha Bay, 148 m. SAM–A14060, 1 juv., False Bay, 35 m. SAM–A14043, 2 non-ovig. ♀, 1 juv., off Still Bay, 200 m. SAM–A14051, 1 non-ovig. ♀, off Jeffreys Bay, 32 m. SAM–A14063, 1 non-ovig. ♀, off Jeffreys Bay, 25 m.

Distribution

Lüderitz to Jeffreys Bay, intertidal to 200 m.

Apanthura dubia Barnard, 1914

Figs 3–4

Apanthura dubia Barnard, 1914; 342a, pl. 28D; 1955: 5.
Apanthura sandalensis non Stebbing, Barnard, 1925*a*: 141; 1940: 490, 498. Nierstrasz, 1941: 241 (*partim*). Day, Field, & Penrith, 1970: 47. Kensley, 1978*a*: 46, fig. 20J–K; 1980: 12, fig. 7.

Diagnosis

Pleonites 1–5 fused, three complete fusion line-grooves between pleonites 1–4, incomplete line between pleonites 4 and 5. Telson widest at midlength, with low rounded proximal mid-dorsal ridge, becoming obsolete distally. Antennular flagellum of two articles. Antennal flagellum of single article. Maxilliped five-segmented, with small triangular endite. Pereopod 1 in male and female with corneous proximal tooth on propodal palm; carpus triangular, with distal corneous tooth, more marked in male. Uropodal exopod with deep distal notch.

Type material

Syntypes, SAM–8826, 2 non-ovig. ♀, 10,0 mm (both damaged), St. James, False Bay, intertidal.

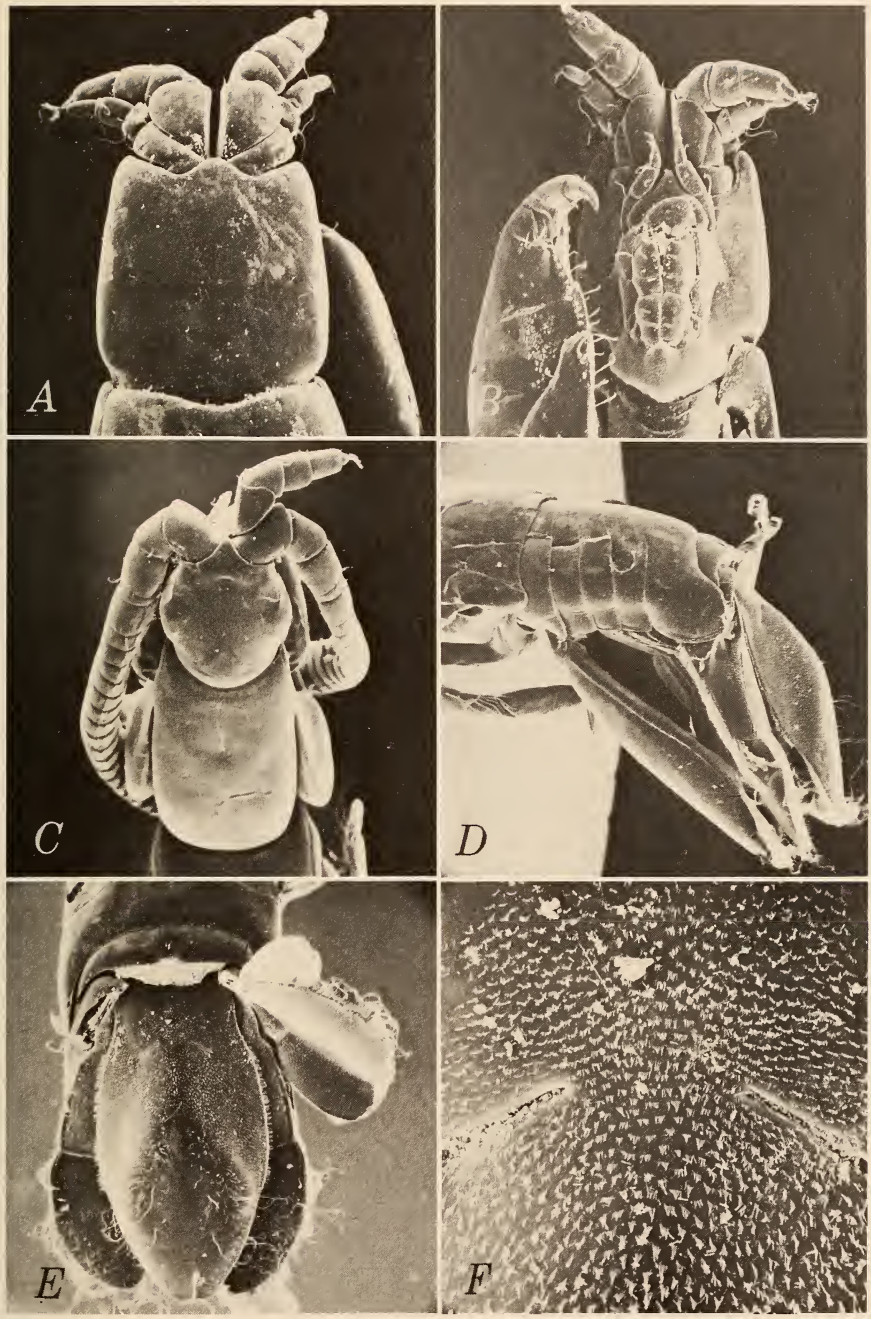

Fig. 2. *Apanthura africana*. A. ♀ cephalon, dorsal view. B. ♀ cephalon, ventral view. C. Sub♂ cephalon. D. Pleon and telson. E. Telson, dorsal view. F. Statocyst apertures.

Fig. 3. *Apanthura dubia*. A. Antenna. B. Antennule. C. Mandibular palp. D. Pereopod 1 ♀. E. Pereopod 7. F. Pereopod 1 ♂. G. Mandibular incisor and lamina dentata. H. Maxilliped. I. Uropodal peduncle and endopod. J. Uropodal exopod.

Other material

SAM–A17494, 1 non-ovig. ♀, 11,0 mm, Saldanha Bay. SAM–A14069, 2 non-ovig. ♀, Agulhas Bank, 36–54 m. SAM–A14353, 1 non-ovig. ♀, 11,0 mm, Agulhas Bank, 27 m. SAM–A14401, 1 non-ovig. ♀, 8,0 mm, Agulhas Bank, 27 m. SAM–A14068, 1 ♂, off Still Bay, 200 m. SAM–A14070, 5 non-ovig. ♀, 1 ♂, off Still Bay, 200 m. SAM–A17495, 1 non-ovig. ♀, off Mossel Bay. SAM–A14072, 2 non-ovig. ♀, off Jeffreys Bay. SAM–A17496, 3 juvs, off Transkei, 150–200 m.

Distribution

Saldanha Bay to Transkei, intertidal to 200 m.

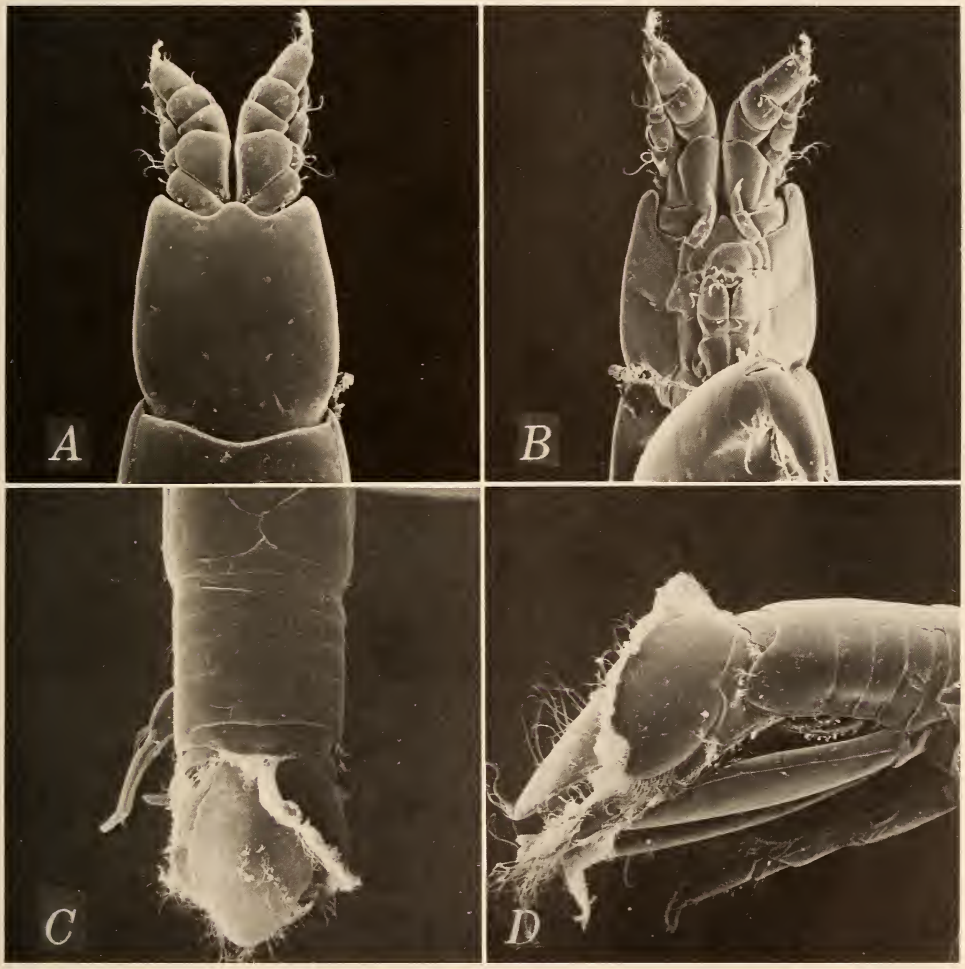

Fig. 4. *Apanthura dubia*. A. ♀ cephalon, dorsal view. B. ♀ cephalon, ventral view. C. Pleon and telson, dorsal view. D. Pleon and telson, lateral view.

Remarks

Apanthura dubia has for many years masqueraded under the name of *A. sandalensis* Stebbing, following Barnard's synonymizing his own species. *Apanthura sandalensis* Stebbing (1900), from the Loyalty Islands, south-western Pacific Ocean, however, does not have a triangular process on the carpus or propodal palm of pereopod 1. (Barnard, 1925*a*, does mention that a co-type in the British Museum (Natural History) has a palmar tooth as in *A. dubia*, which casts doubt on the identity of the specimen.) The telson of *A. dubia* is distally narrower, the antennal flagellum has fewer articles, and the uropodal exopod is broader than in *A. sandalensis*.

Barnard's (1935) *A. sandalensis* from Travancore, Kerala, India, and Pillai's (1966) *A. sandalensis* from Kerala, India, probably belong to neither of these species. Pillai's species shows a uropodal endopod too slender, a more setose telson, and antennae having too many flagellar articles.

Chilton (1924) recorded *A. sandalensis* from Chilka Lake, India, but the very slender antenna and antennule, the former with a three-articulate flagellum, makes this identification doubtful. Larwood (1940, fig. 7) recorded *A. sandalensis* (which he too synonymized with *A. dubia*) from Alexandria, Mediterranean Sea, but the sinus of the uropodal exopod is not as deep as in *A. dubia*, while the uropodal endopod is less elongate. Larwood's material thus probably does not belong to either species.

Apanthura insignifica Kensley, 1978

Figs 5–6

Apanthura insignifica Kensley, 1978*b*: 2, figs 1–2.

Diagnosis

Eyes weakly pigmented. Telson elliptical-oval, with weak mid-dorsal longitudinal ridge, distal margin broadly rounded. Uropodal exopod oval, margin entire.

Type material

Holotype, SAM–A15646, 1 non-ovig. ♀, 5,9 mm, off Natal, 690 m. Paratypes, SAM–A15647, 1 non-ovig. ♀, 4,5 mm. 1 sub♂, 5,6 mm, off Natal, 850 m. Paratype, SAM–A15646, 1 non-ovig. ♀, 5,2 mm, off Natal, 690 m. Paratypes, USNM 170542, 2 non-ovig. ♀, 5,4–5,6 mm, off Natal, 850 m.

Other material

SAM–A17497, 1 non-ovig. ♀, 4,5 mm, off East London, 630 m. SAM–A17499, 2 non-ovig. ♀, 4,3 mm, 4 juvs, south of East London, 90 m. SAM–A17500, 1 ♂, 6,3 mm, off Natal, 850 m. SAM–A17498, 1 ♂, 5,0 mm, 1 non-ovig. ♀, 4,6 mm, off Zululand, 550 m.

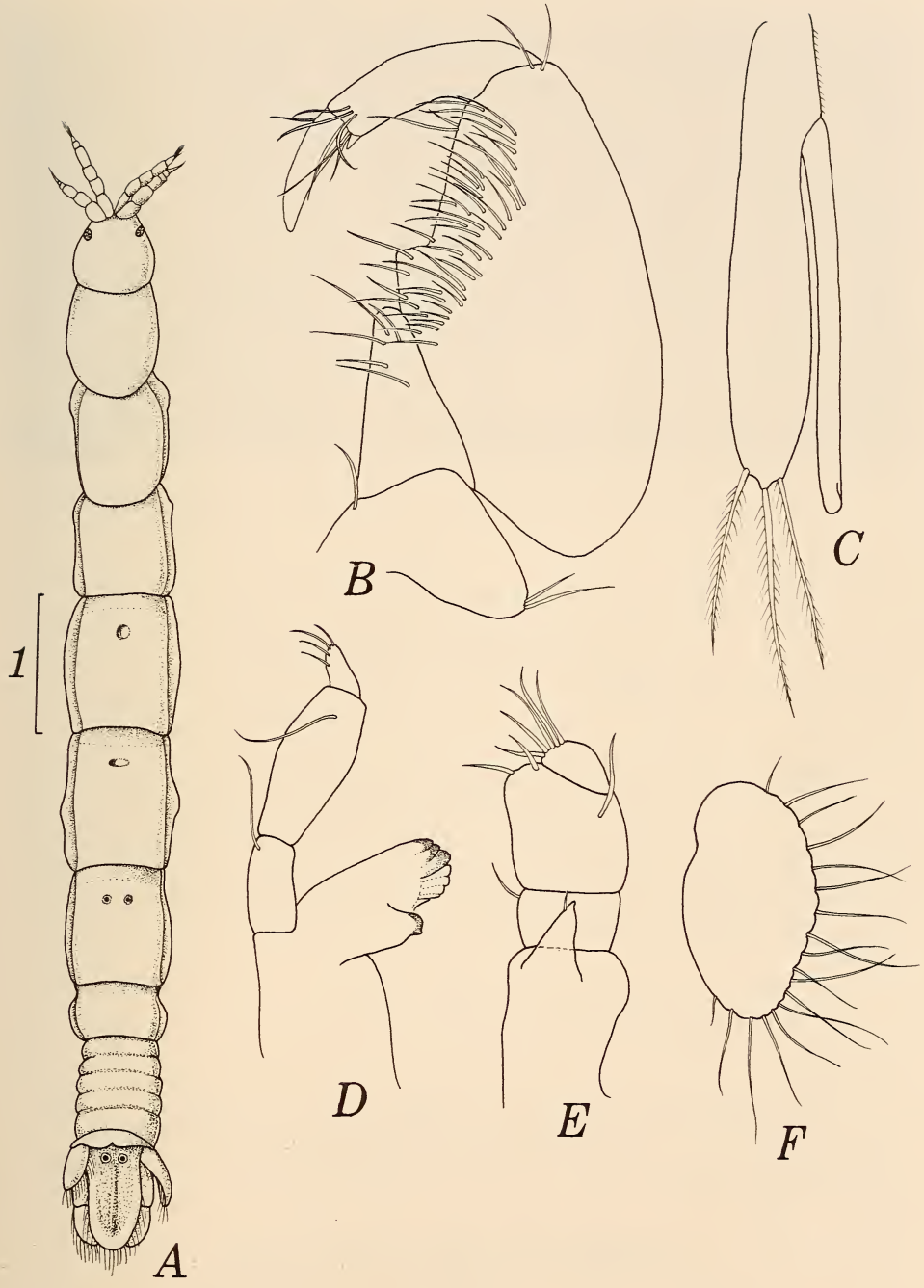

Fig. 5. *Apanthura insignifica*. A. ♀ dorsal view. B. Pereopod 1 ♀. C. Pleopod 2 endopod ♂. D. Mandible. E. Maxilliped. F. Uropodal exopod. Scale in mm.

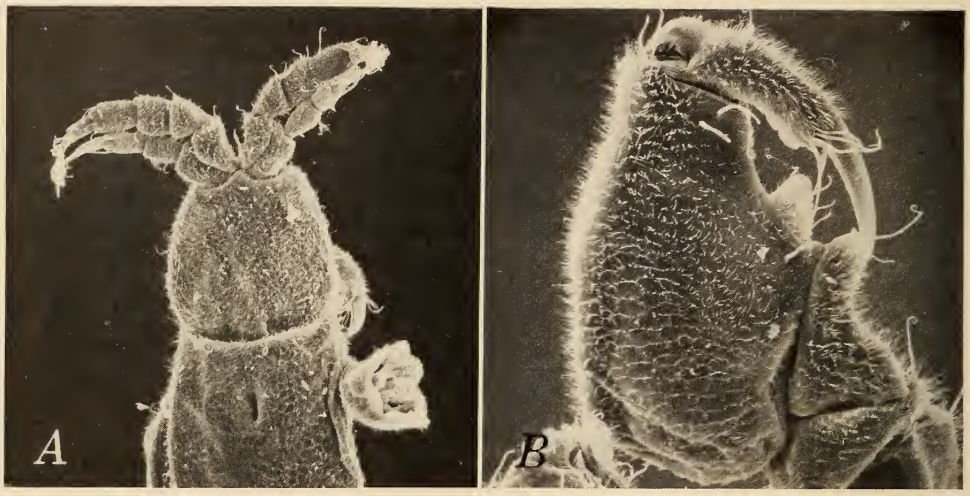

Fig. 6. *Apanthura insignifica*. A. ♀ cephalon, dorsal view. B. Pereopod 1 ♀.

Distribution

South of East London to Zululand, 90–850 m.

Apanthuroides Menzies & Glynn, 1968

Natalanthura Kensley, 1978*b*: 5.

Diagnosis

Eyes present. Mandibular palp three-segmented; molar slender and spike-like on one side, absent on other. Maxilliped five-segmented, endite present. Pereopods 1–3 subsimilar, barely subchelate. Pereopods 4–7 with rectangular carpus. Pleopod 1 exopod and endopod together forming operculum. Pleonites 1–5 fused; pleonite 6 fused with telson. Telson with basal statocysts. Integument pitted.

Type species

Apanthuroides millae Menzies & Glynn, 1968.

Remarks

Re-examination of the types of *Apanthuroides millae* from Puerto Rico, and fresh material from Belize, Central America, has shown that the pleonal segmentation, and especially the unusual mandibular structure, is identical to that of *Natalanthura*.

Apanthuroides foveolata (Kensley, 1978)

Figs 7–8

Natalanthura foveolata Kensley, 1978*a*: 6, figs 3–4; 1980: 3, 32. Wägele 1981: 88–90.
Natalanthura natalensis Kensley, 1979: 823, (*laps. cal.*)

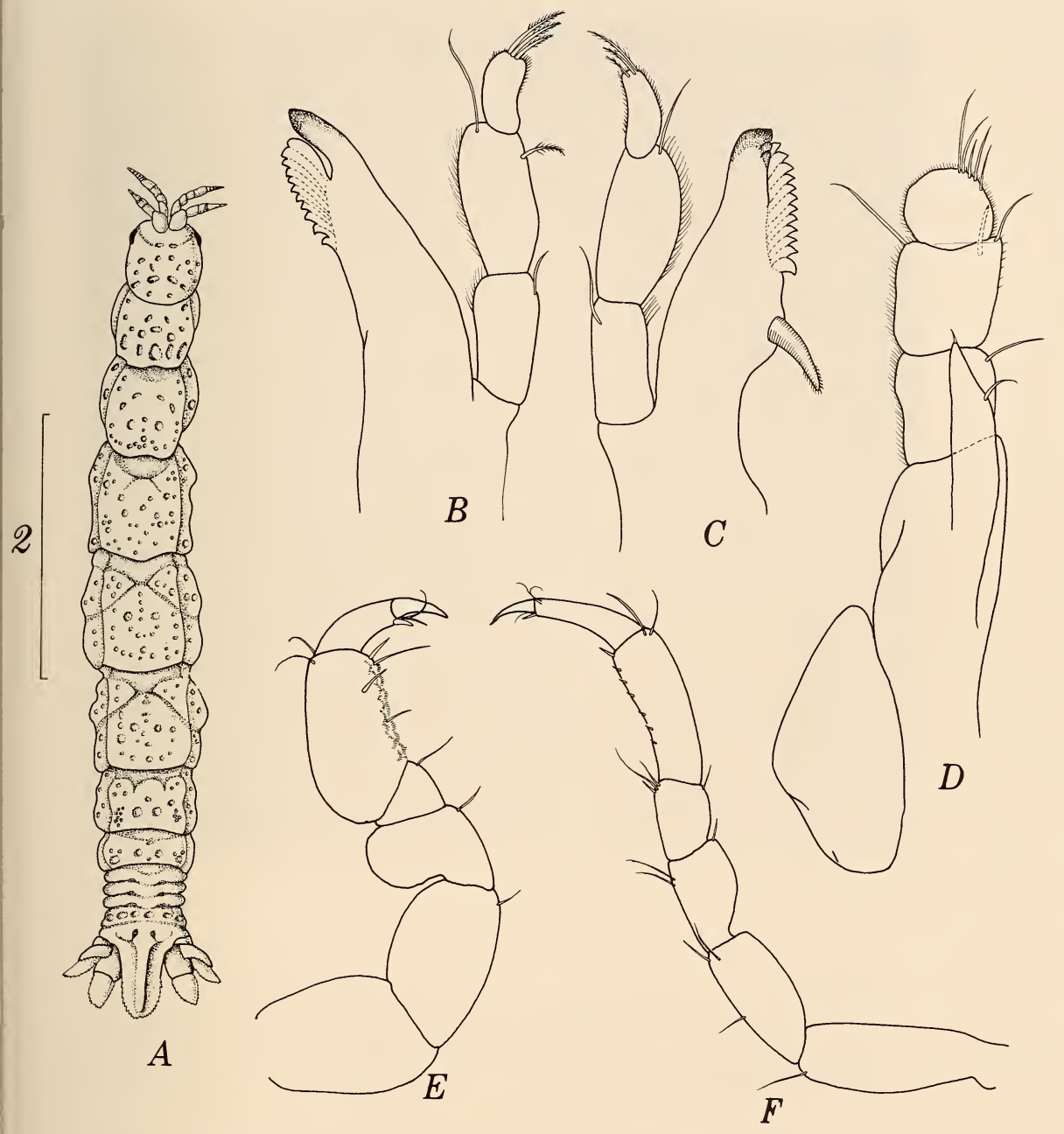

Fig. 7. *Apanthuroides foveolata*. A. ♀ dorsal view. B. Right mandible. C. Left mandible. D. Maxilliped. E. Pereopod 1. F. Pereopod 7. Scale in mm.

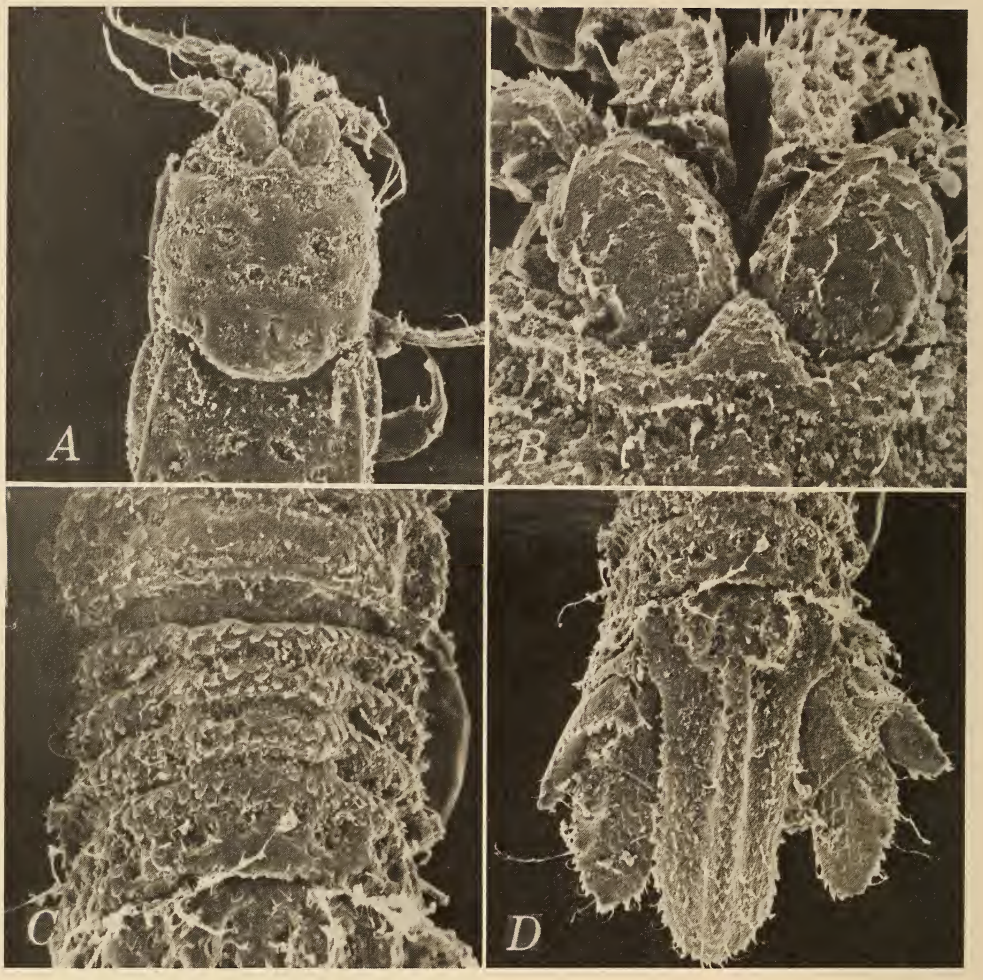

Fig. 8. *Apanthuroides foveolata*. A. ♀ cephalon. B. Rostrum and antennal bases. C. Pleon in dorsal view. D. Telson and uropods.

Diagnosis

Telson with strong mid-dorsal longitudinal ridge. Telsonic and uropodal margins serrate. Antennular flagellum of three articles; antennal flagellum of six articles. Eyes feebly pigmented.

Type material

Holotype, SAM–A15648, 1 non-ovig. ♀, 5,8 mm, off Zululand, 550 m. Paratypes, SAM–A15648, 2 non-ovig. ♀, 3,5–5,4 mm, off Zululand, 550 m. Paratype, SAM–A15649, 1 juv., 3,4 mm, off Natal, 690 m. Paratype,

SAM–A15650, 1 ovig. ♀, 6,9 mm, off Natal, 850 m. Paratypes, USNM 170543, 3 non-ovig. ♀, 4,3–4,6 mm, off Zululand, 550 m.

Other material

SAM–A17501, 1 non-ovig. ♀, off Transkei, 630 m. SAM–A17502, 1 ovig. ♀, 3 non-ovig. ♀, 1 sub♂, 1 juv., off Transkei, 710–775 m. SAM–A17503, 1 juv., off Transkei, 560–620 m.

Distribution

Zululand to Transkei, 550–850 m.

Centranthura Wägele, 1981

Centranthura Wägele, 1981: 113.
Haliophasma: Kensley, 1975*b*, *partim*.

Diagnosis

Eyes absent. Antennular flagellum of three articles; antennal flagellum of two articles. Maxilliped three-segmented; endite absent. Pereopod 1 subchelate, propodus expanded. Pereopods 4–7 with narrow rectangular carpus. Pleonites 1–5 fused, pleonite 6 free. Telson with two basal statocysts.

Type species

Haliophasma caecus Kensley, 1975*b*.

Centranthura caeca (Kensley, 1975)

Figs 9–10

Haliophasma caecus Kensley, 1975*b*: 209, figs 1–2; 1978*a*: 49, fig. 21 E.
Centranthura caecus: Wägele, 1981: 113.

Diagnosis

Pereonites 4–6 with mid-dorsal pit. Telson widest at midlength, with low rounded proximal ridge, distally narrowed, distal margin broadly rounded. Antennule with three-articulate flagellum; antenna with two-articulate flagellum. Pereopod 1 subchelate, propodus expanded, propodal palm sinuous in female, with peg-like tooth in male. Pereopods 4–7 with narrow rectangular carpus not underriding propodus. Uropodal exopod oval, outer margin sinuous, apex acute.

Type material

Holotype, SAM–A13626, 1 ♂, 18,2 mm, Lambert's Bay. Allotype, SAM–A13626 1 non-ovig. ♀, 16,0 mm, Lambert's Bay. Paratypes, SAM–A13627, 1 ♂, 21,0 mm, 5 non-ovig. ♀, 12,5–17,5 mm, Langebaan Lagoon.

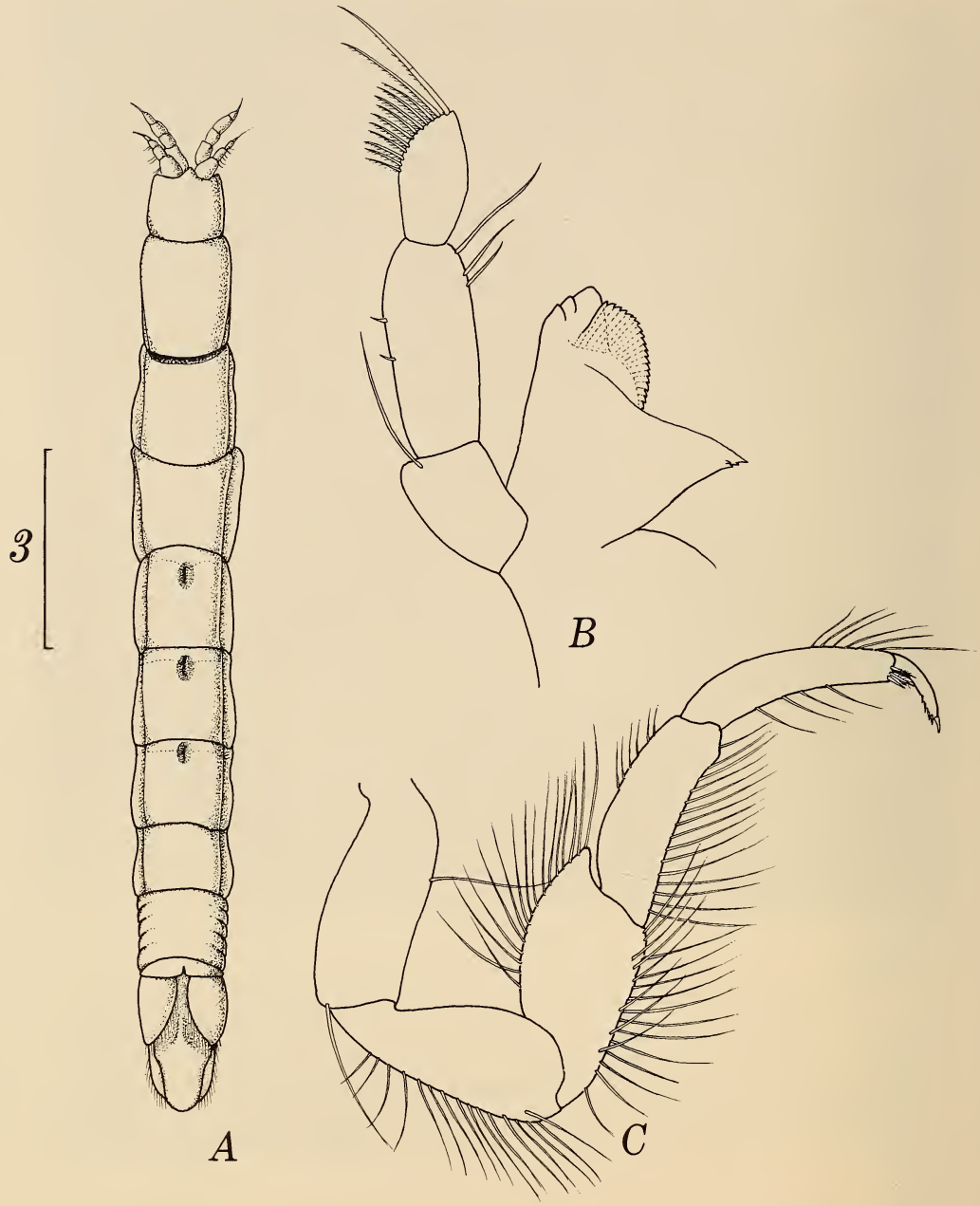

Fig. 9. *Centranthura caeca*. A. ♀ dorsal view. B. Mandible. C. Pereopod 7. Scale in mm.

Other material

SAM–A14419, 15 non-ovig. ♀, 17 juvs, Lambert's Bay. SAM–A14064, 1 juv., off Saldanha Bay, 51 m. SAM–A14106, 1 non-ovig. ♀, 12 juvs, off Saldanha Bay, 22 m. SAM–A14107, 1 ♂, off Saldanha Bay, 172 m. SAM–A14108, 2 non-ovig. ♀, Saldanha Bay, 31 m. SAM–A14109, 1 non-ovig. ♀, off Saldanha Bay, 18 m. SAM–A14110, 3 non-ovig. ♀, off Saldanha Bay, 62 m. SAM–A14114, 2 non-ovig. ♀, off Saldanha Bay, 62 m. SAM–A14116, 2 ♂, 7 non-ovig. ♀, 1 juv., off Saldanha Bay, 51 m. SAM–A14122, 1 ♂, 3 juvs, off Saldanha Bay, 15 m. SAM–A14123, 1 non-ovig. ♀, off Saldanha Bay, 54 m. SAM–A14407, 1 non-ovig. ♀, Saldanha Bay, 27 m. SAM–A14408, 4 non-ovig. ♀, 4 juvs, off Saldanha Bay, 68 m. SAM–A14409, 1 non-ovig. ♀, 2 juvs, Saldanha Bay, 9 m. SAM–A14413, 1 non-ovig. ♀, off Saldanha Bay, 32 m. SAM–A14417, 4 non-ovig. ♀, 16 juvs, Saldanha Bay, 31 m. SAM–A14421, 9 non-ovig. ♀, off Saldanha Bay, 27 m. SAM–A14422, 1 non-ovig. ♀, Saldanha Bay, 5 m. SAM–A14847, 1 juv., off Saldanha Bay, 68 m. SAM–A17469, 2 non-ovig. ♀, 3 juvs, off Saldanha Bay. SAM–A17470, 1 non-ovig. ♀, 1 juv., off Saldanha Bay. SAM–A17471, 1 non-ovig. ♀, off Saldanha Bay. SAM–A17472, 7 non-ovig. ♀, 4 juvs, off Saldanha Bay. SAM–A17473, 1 non-ovig. ♀, off Saldanha Bay. SAM–A14410, 3 non-ovig. ♀, 2 juvs, Langebaan Lagoon. SAM–A14412, 11 non-ovig. ♀, Langebaan Lagoon. SAM–A14414, 2 ♂, 3 non-ovig. ♀, Langebaan Lagoon. SAM–A14423, 1 ♂, 1 non-ovig. ♀, Langebaan Lagoon. SAM–A14424, 1 non-ovig. ♀, Langebaan Lagoon. SAM–A14425, 1 non-ovig. ♀, Langebaan Lagoon. SAM–A14426, 1 non-ovig. ♀, Langebaan Lagoon. SAM–A14428, 1 non-ovig. ♀, Langebaan Lagoon. SAM–A14429, 4 non-ovig. ♀, Langebaan Lagoon. SAM–A14430, 1 non-ovig. ♀, Langebaan Lagoon. SAM–A14431, 1 ♂, 2 non-ovig. ♀, Langebaan Lagoon. SAM–A14432, 1 non-ovig. ♀, Langebaan Lagoon. SAM–A14427, 1 ♂, 1 non-ovig. ♀, 1 juv., Langebaan Lagoon. SAM–A14112, 1 ♂, False Bay, 9 m. SAM–A14121, 1 non-ovig. ♀, False Bay, 7–9 m. SAM–A14126, 1 non-ovig. ♀, False Bay, 68 m. SAM–A14406, 1 juv., False Bay, 31 m. SAM–A14415, 1 sub♂, False Bay, 31 m. SAM–A14416, 1 non-ovig. ♀, False Bay, 31 m. SAM–A14411, 1 ♂, Agulhas Bank, 44 m. SAM–A14041, 1 non-ovig. ♀, Still Bay, 80 m. SAM–A14420, 1 non-ovig. ♀, Mossel Bay.

Distribution

Lambert's Bay to Mossel Bay, 5–68 m.

Remarks

Wägele (1981) placed *Haliophasma caecus* into the new genus *Centranthura* for the following reasons: the 'primitive' antennule bearing four aesthetascs, the telson which is neither significantly elongate nor dorsally strongly keeled, and the antenna, which has a shorter flagellum than most

Fig. 10. *Centranthura caeca*. A. Mandible. B. Maxilla. C. Maxilliped, external surface. D. Maxilliped, internal surface.

species of *Haliophasma*. It is now felt that *H. caecus* should, indeed, be in a separate genus, but not for the reasons given by Wägele.

In the original description, Kensley (1975*b*) indicated that the maxilliped was three- or four-segmented, and that the terminal segment was not distinct. In the scanning electron micrograph (Fig. 10) a distinct groove is visible, delimiting an obliquely-inserted fourth segment bearing five setae. In a cleared and mounted specimen, however, this groove is seen to be not a true suture, but a superficial fold perhaps indicating a line of fusion. The first maxillipedal palp segment was indicated (1975*b*, fig. 1g) as having an indistinct groove in its

proximal third. In the scanning electron micrograph this groove is seen on the external face of the segment, but barely indicated on the internal face, once again indicating a line of fusion. The cleared and mounted specimen again shows this not to be a true suture. The maxilliped is therefore regarded as being three-segmented, as in *Anthura*, *Exallanthura*, *Pendanthura*, *Ptilanthura*, *Venezanthura*, and *Xenanthura*.

Centranthura differs from these genera in the following respects: it does not have the six free elongate pleonites of *Xenanthura*; it lacks the very shortened pleon and maxillipedal endite of *Pendanthura*; it does not have a single-segmented mandibular palp as seen in *Ptilanthura* and *Exallanthura*; it lacks the maxillipedal endite and two-segmented mandibular palp of *Venezanthura*. Wägele (1981) separates *Centranthura* from *Anthura* on the basis of the five distal maxillipedal setae being inserted in a shallow distal indentation, rather than laterally as in *Anthura*. Further differences include the multidentate lamina dentata and the spiculate molar of *C. caeca*, and the reduced antennal flagellum.

Centranthura caeca perhaps represents a form in the evolution of reduction of the maxillipedal segments from five (as in *Malacanthura*) and four (as in *Haliophasma*). This reduction is probably correlated with a specialized mode of feeding as part of the infauna of fine-sediment embayments. The marginally setose and broad segments of pereopods 2–7 are probably also correlated with this habitat choice.

Cyathura Norman & Stebbing, 1886

Diagnosis

Eyes present or absent. Mandibular palp 3-segmented. Maxilliped 4-segmented; endite absent. Pereopod 1 subchelate, propodus expanded; pereopods 2–3 ambulatory; pereopods 4–7 with triangular carpus underriding propodus. Pleopod 1 exopod operculiform. Pleonites 1–5 fused, pleonite 6 free or fused to telson. Telson with two basal statocysts.

Type species

Anthura carinata Krøyer, 1847.

Cyathura estuaria Barnard, 1914

Figs 11–12

Cyathura estuaria Barnard, 1914: 334a, pl. 27D; 1955: 5. Miller & Burbanck, 1961: 62, 65. Burbanck & Burbanck, 1972: 274. Kensley, 1978*a*: 47, fig. 21A–B.

Cyathura carinata non Krøyer, Barnard, 1940: 490. Day, Millard, & Harrison, 1952: 408. Day, Millard, & Broekhuysen, 1954: 152. Millard & Harrison, 1954: 176. Day, 1959: 532; 1969: 78, fig. (unnumbered). Boltt, 1969: 253, 255, 259, 261.

Cyathura sp., Day, 1967: figs 3–4.

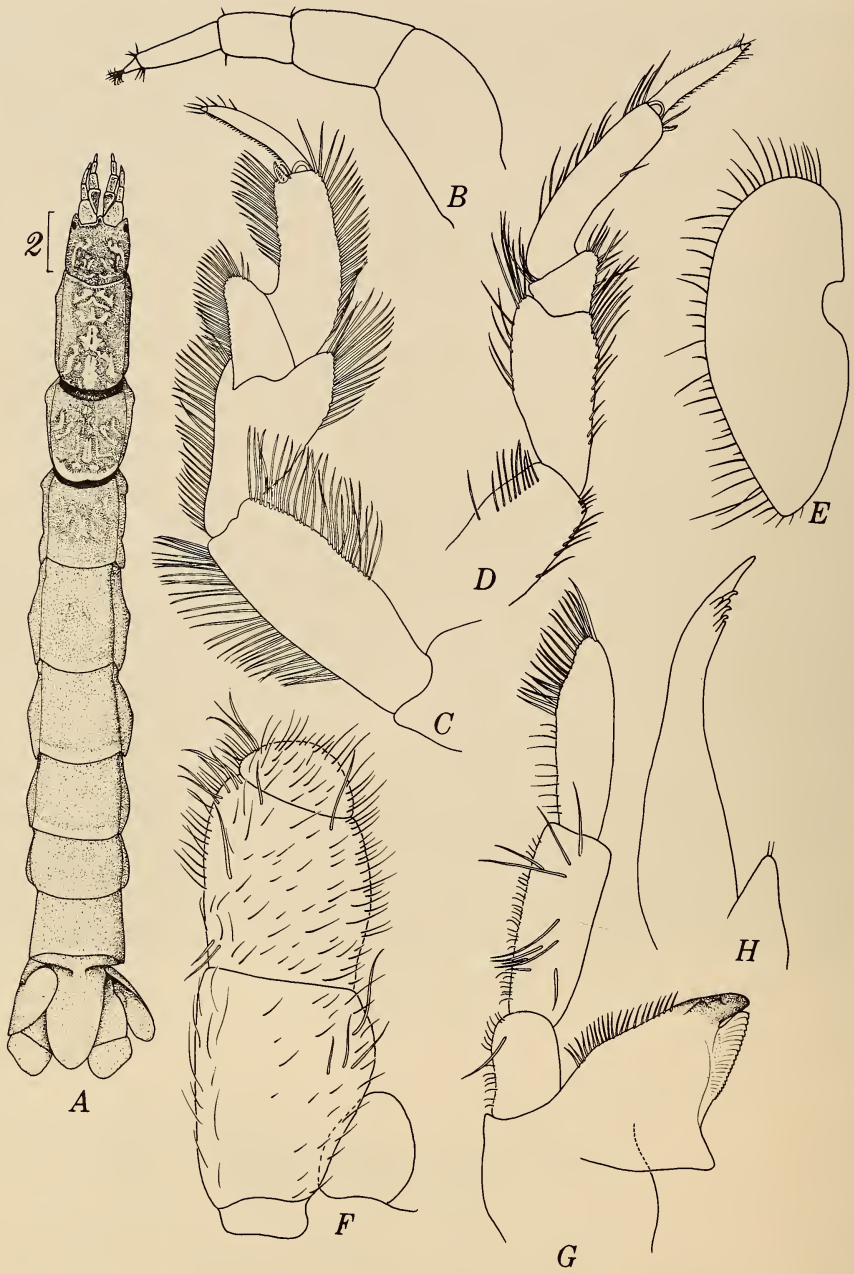

Fig. 11. *Cyathura estuaria*. A ♀ dorsal view. B. Antennule. C. Pereopod 2. D. Pereopod 7. E. Uropodal exopod. F. Maxilliped. G. Mandible. H. Maxilla. Scale in mm.

Diagnosis

Integument moderately setose. Telson parallel-sided for three-quarters of length, distally rounded, fused mediodorsally with pleonite 6. Copulatory stylet of pleopod 2 endopod in male not extending beyond ramus. Pereopod 1 female with rounded tooth on propodal palm; carpus distally produced, rounded.

Type material

Syntype, SAM–A68, 1 non-ovig. ♀, 27,5 mm, Buffalo River estuary. Syntypes, SAM–A2269, 14 juvs, 3,2–8,0 mm, Zwartkops River estuary. Syntypes, SAM–A14073, 3 juvs, 7,0 mm. Zwartkops River estuary.

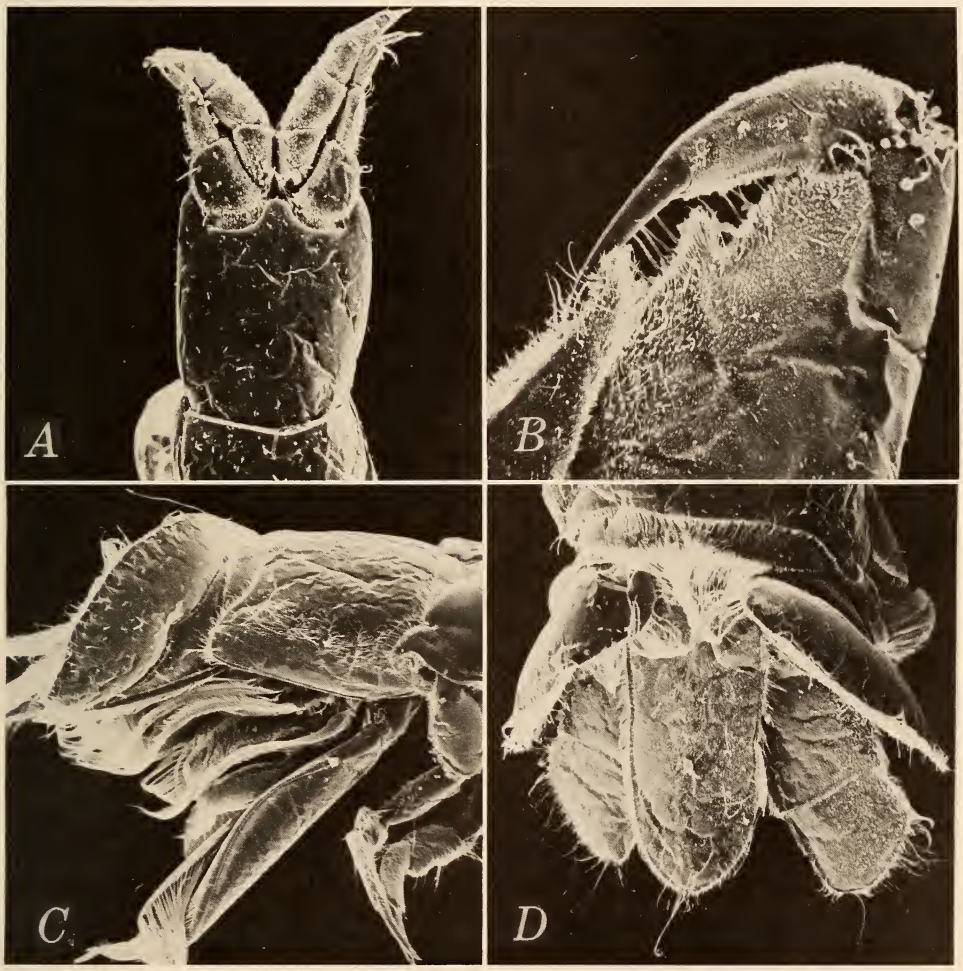

Fig. 12. *Cyathura estuaria*. A. ♀ cephalon. B. Pereopod 1, dactylus and propodus. C. Pleon, lateral view. D. Telson and uropods, dorsal view.

Other material

SAM–A6289, 1 juv., St. Lucia estuary. University College of Zululand, 1 non-ovig. ♀, 20,1 mm, Lake Msingazi, Zululand.

Distribution

Langebaan Lagoon; east coast estuaries and lakes from Zwartkops River, Port Elizabeth, to Zululand.

Remarks

The species has been taken from estuarine muds in salinities ranging from 0 to 35‰.

Haliophasma Haswell, 1881

Exanthura Barnard, 1914: 336a.

Diagnosis

Integument usually indurate, often with scattered small pits. Pereonites 4–6 each with single mid-dorsal pit. Pleonites 1–5 fused, pleonite 6 free, or rarely more or less fused with telson. Telson often sculptured, indurate, with pair of basal statocysts. Antennular flagellum of two to six articles. Antennal flagellum of four to seven articles. Mandibular palp three-segmented. Maxilliped four -segmented, rarely with very reduced endite. Pereopod 1 propodus expanded. Pereopods 2–3 ambulatory, propodi not expanded. Pereopods 4–7 with rectangular carpi, not underriding propodi. Pleopod 1 exopod operculiform, often indurate.

Type species

Haliophasma purpureum Haswell, 1881.

Remarks

Since the diagnosis of *Haliophasma* provided by Poore (1975), it has become obvious that several of the South African species formerly in this genus really belong to *Malacanthura* with its characteristically five-segmented maxilliped. Only *H. tricarinatum* remains of the seven southern African species previously placed in *Haliophasma*.

The genus *Exanthura* Barnard, 1914, was created for *E. macrura* Barnard, *E. filiformis* (Lucas) being added later. On the basis of *E. macrura* however, there is little justification for separating this genus from *Haliophasma*. The maxilliped of *E. macrura* does carry a tiny endite, not seen in *Haliophasma* s.s., while the basal antennular segment bears a strong recurved spiniform process that becomes obsolete in mature specimens. This antennular feature is regarded as being only of specific value.

The position of *E. filiformis* (Lucas) is uncertain, as the type has not been located. The description and figures given by Larwood (1940) for *E. filiformis*

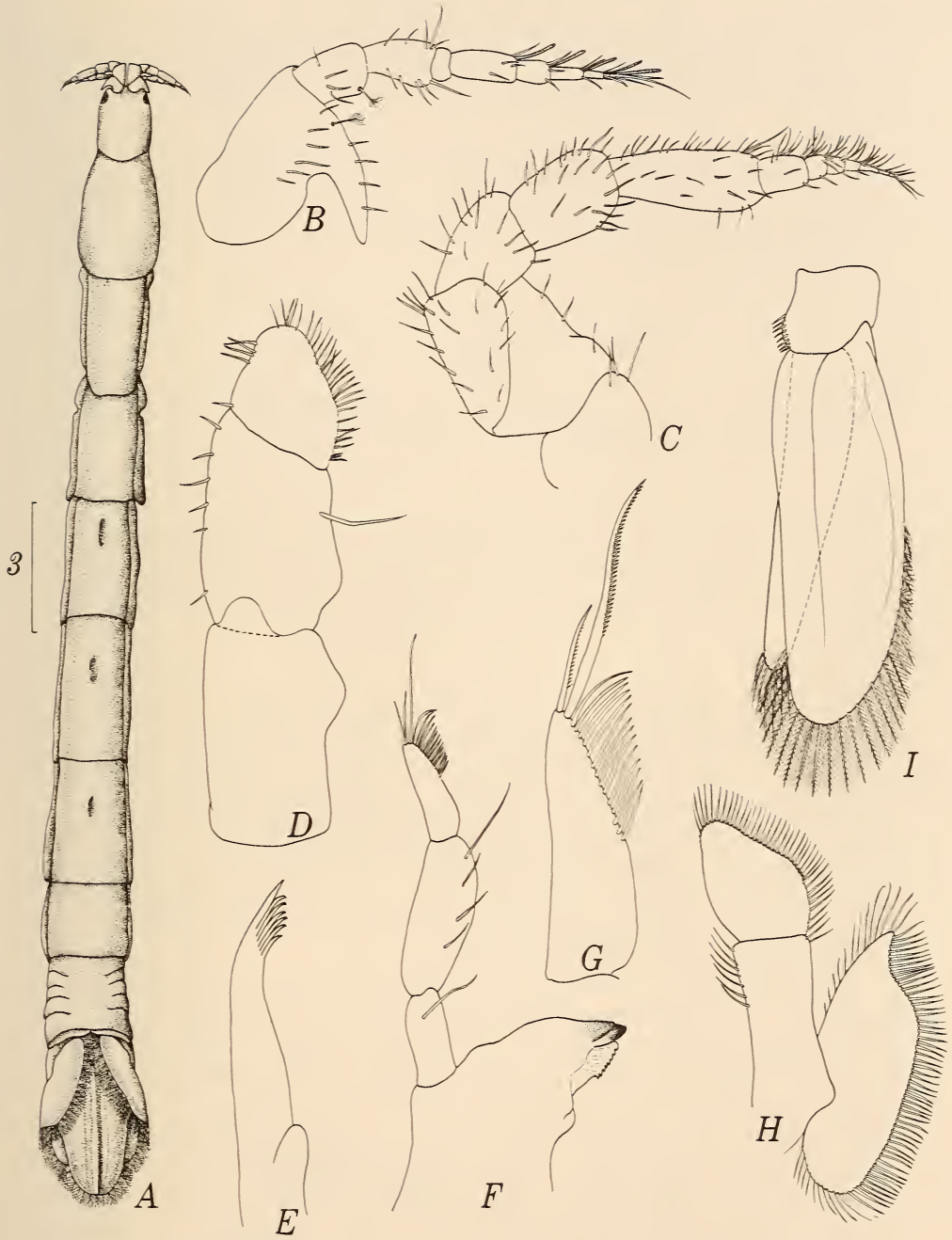

Fig. 13. *Haliophasma austroafricana*. A. ♀ dorsal view. B. Antennule. C. Antenna. D. Maxilliped. E. Maxilla. F. Mandible. G. Distal mandibular palp segment. H. Uropod. I. Pleopod 1. Scale in mm.

from the Mediterranean, however, show a five-segmented maxilliped. As the South African and Mediterranean material previously assigned to this species obviously do not belong to the same species, a new name is provided for the former.

KEY TO THE SOUTH AFRICAN SPECIES OF *HALIOPHASMA*

1. Telson dorsally smooth, distally truncate ..... *macrurum*
– Telson dorsally ridged, distally rounded 2
2. Telson with single mid-dorsal ridge ..... *austroafricanum*
– Telson with 3 dorsal ridges ..... *tricarinatum*

Haliophasma austroafricanum sp. nov.

Figs 13–15

Exanthura filiformis (*non* Lucas): Barnard, 1920: 340; 1925*b*: 388; 1925*a*: 131, pl. 4, fig. 22; 1940: 490, 497; 1959: 715, fig. 1. Nierstrasz, 1941: 239 (*partim*). Day, Field & Penrith, 1970: 47. Kensley, 1975*a*: 38; 1978*a*: 47, fig. 21C. Wägele, 1981: 114.

Diagnosis

Body slender, parallel-sided; pereonites 4–6 each with strong mid-dorsal pit. Basal segment of antennule with strong conical, posteriorly-directed tooth-like process. Telson with strong mid-dorsal carina. Mature female unknown.

Description

Non-ovigerous female. Integument moderately indurate; numerous short setae arising from shallow 'dimples' scattered over entire integument. Body proportions: $C < 1 = 2 > 3 < 4 < 5 > 6 > 7 = P$. Cephalon with strong triangular rostrum slightly overreaching anterolateral corners. Large dorsolateral eyes. Pereonites 4–6 each with strong mid-dorsal elongate-oval pit. Pleonites 1–5 fused, fusion lines marked by dorsolateral grooves; pleonite 6 free, very short, with mid-dorsal notch in posterior margin. Telson with lateral margins subparallel, faintly sinuous; distal margin truncate-rounded, densely setose; strong longitudinal mid-dorsal carina present.

Basal antennular peduncle segment longer and broader than two following segments, with strong tapering posteriorly-directed tooth-like process; flagellum of six articles, four distal articles each with single aesthetasc. Antenna bearing numerous short setae, second peduncle segment longer than segment 3; segments 3 and 4 subequal, segment 5 one-third longer than 4; flagellum of seven setose articles. Mandibular palp segment 2 longest, segment 3 with fourteen simple distal spines and one short and one elongate serrate spine; incisor of two cusps; lamina dentata of nine serrations; molar reduced, rounded. Maxilla with one strong and six more slender distal spines. Maxilliped four-segmented, distal segment rounded, setose, set obliquely on segment 3; endite absent, segments 2 and 3 subequal in length. Pereopod 1 subchelate, expanded; unguis strong, more than half length of rest of dactylus; propodal

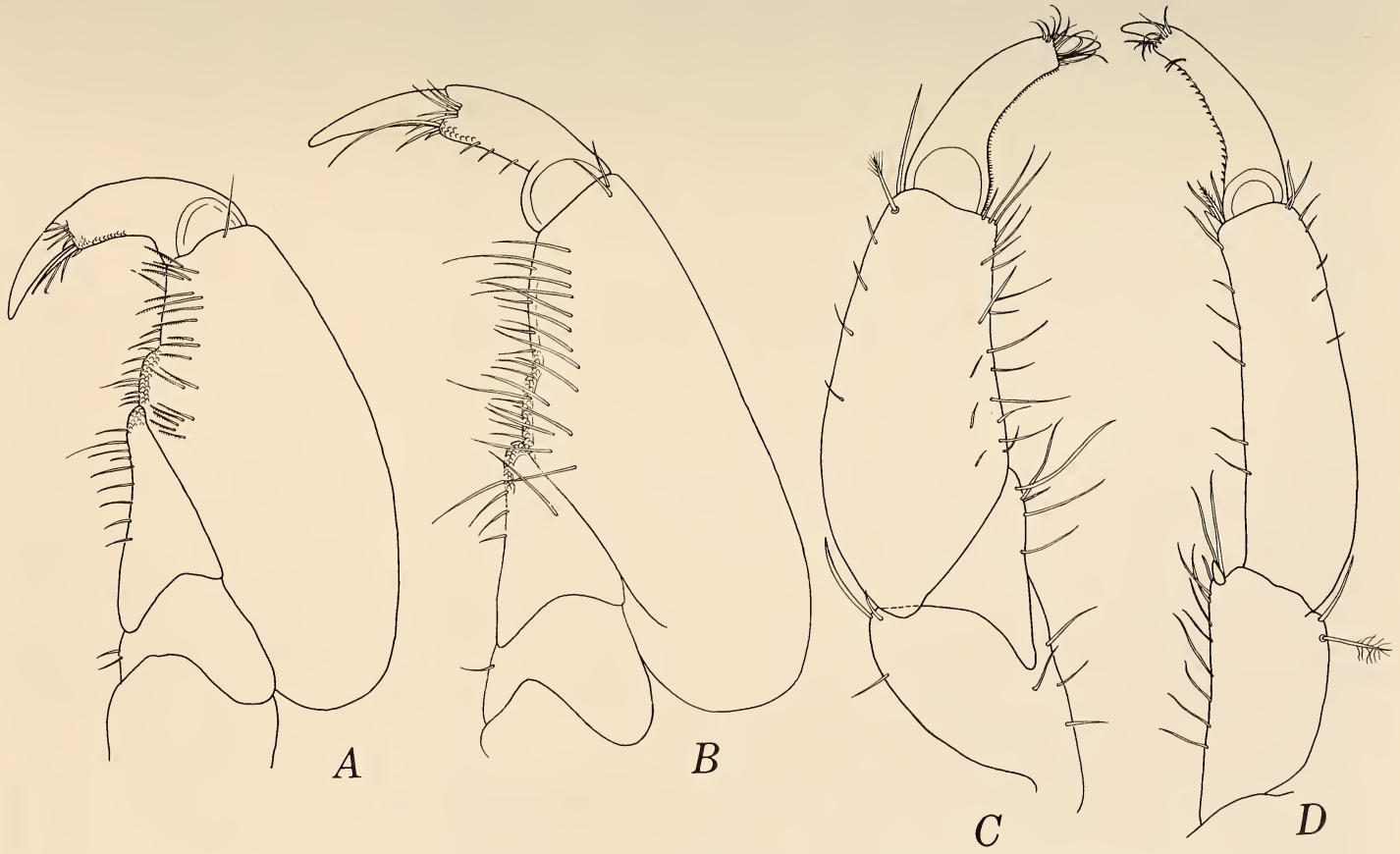

Fig. 14. *Haliophasma austroafricanum*. A. Pereopod 1 ♀. B. Pereopod 1 ♂. C. Pereopod 2. D. Pereopod 7.

palm with low rounded scale-bearing lobe in proximal half, few simple marginal setae; inner surface near palm with several fringed spines; carpus triangular, short. Pereopods 4–7 with unguis about one-fifth length of dactylus; propodus elongate-rectangular, with short spine at posterodistal angle; carpus rectangular, with short spine at posterodistal angle. Pleopod 1 exopod operculiform, distal margin densely fringed with plumose setae, outer surface with groove close to lateral margin, shorter ridge set back from medial margin; endopod tapering, not reaching exopod apex; basis with seven or eight coupling hooks, Uropodal exopod reaching beyond base of endopod, margin finely denticulate, densely setose, distally acute, lateral margin with strong distal sinuousity; endopod not reaching telsonic apex, margins finely denticulate, strongly setose, tapering distally, apically rounded.

Male. Antennular flagellum of twenty aesthetasc-bearing articles. Pereopod 1 propodus with dense band of simple setae on inner surface near palm. Pleopod 2 endopod with copulatory stylet reaching distal margin of ramus, distally spooned.

Type material

Holotype, SAM–A14078, non-ovig. ♀, 26,5 mm, 33°50′S 25°47′E (near Port Elizabeth), 36 m. Paratype, SAM–A5965, non-ovig. ♀, 21,5 mm, off Cape Infanta, 86 m. Paratype, SAM–A4012, non-ovig. ♀, 22,5 mm, off Cape Peninsula, 460 m.

Other material

SAM–A14079, 1 juv., False Bay, 68 m. SAM–A14081, 1 juv., False Bay, 75 m. SAM–A14086, 1 juv., False Bay, 33 m. SAM–A14088, 3 juvs, False Bay, 42 m. SAM–A14089, 1 sub♂, False Bay, 87 m. SAM–A14090, 1 juv., False Bay, 73 m. SAM–A14095, 1 juv., False Bay, 36 m. SAM–A14096, 1 juv., False Bay, 31 m. SAM–A14098, 1 juv., False Bay, 18 m. SAM–A14102, 1 juv., False Bay. SAM–A14075, 1 non-ovig. ♀, Agulhas Bank, 45 m. SAM–A14077, 1 non-ovig. ♀, Agulhas Bank, 44 m. SAM–A14085, 1 juv., Agulhas Bank, 200 m. SAM–A14091, 1 juv., Agulhas Bank, 42 m. SAM–A14092, 1 juv., Agulhas Bank, 183 m. SAM–A17504, 2 juvs, off Natal–Transkei, 80 m. SAM–A17505, 1 juv., off Natal–Transkei, 90 m. SAM–A17506, 1 juv., off Natal–Transkei, 560–620 m. SAM–A17507, 1 juv., off Natal–Transkei, 150–200 m. SAM–A17508, 1 juv., off Natal–Transkei, 550 m.

Distribution

Saldanha Bay to Natal, 19–620 m.

Etymology

The specific name refers to South Africa, where the species appears to be endemic.

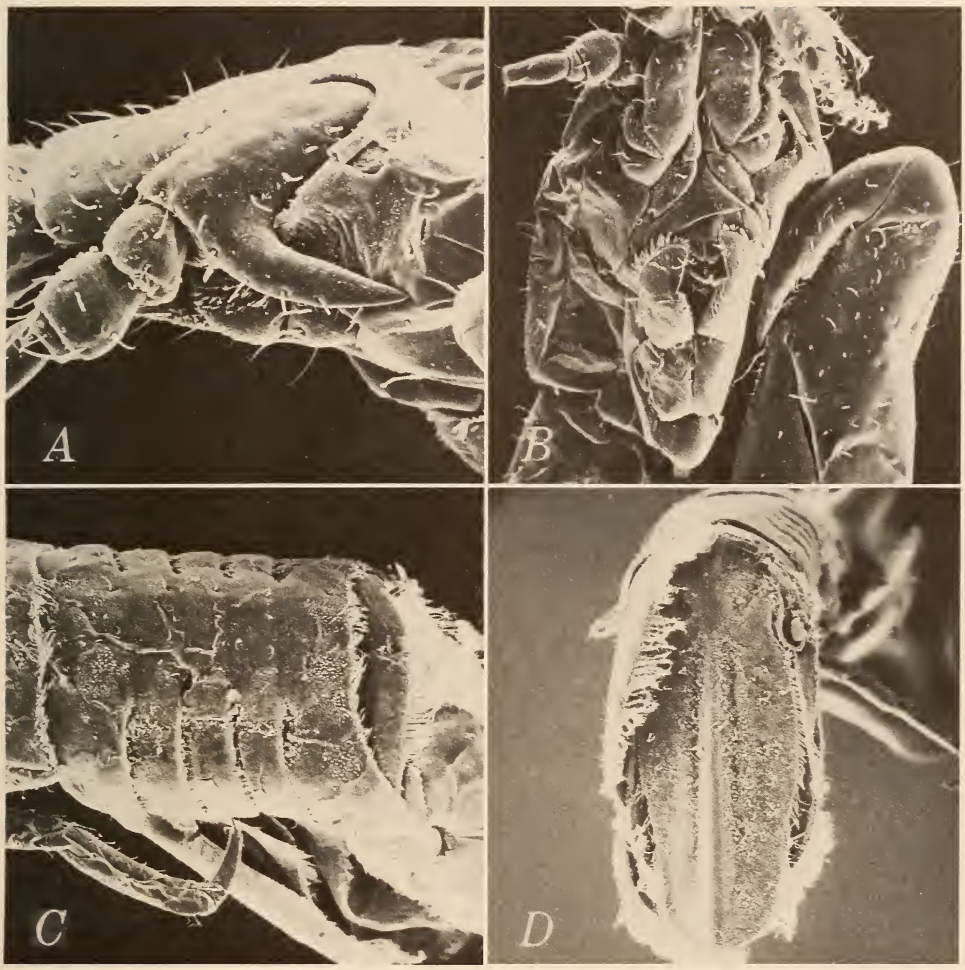

Fig. 15. *Haliophasma austroafricanum*. A. Antennular base. B. Cephalon, ventral view. C. Pleon. D. Telson.

Haliophasma macrurum (Barnard, 1914)

Figs 16–18

Exanthura macrura Barnard, 1914: 337a, pl. 28A; 1925*a*: 131, fig. 7; 1940: 490, 497; 1955: 5. Penrith & Kensley, 1970: 227. Kensley, 1978*a*: 47, fig. 21D. Wägele, 1981: 114.
Exanthura macruron (*sic*): Nierstrasz, 1941: 239.

Diagnosis

Body widening posteriorly, pereonites 4–6 each with strong mid-dorsal pit. Telson widening posteriorly, distal margin truncate. Uropods and telson together forming cup-shaped protective 'operculum', margins densely setose.

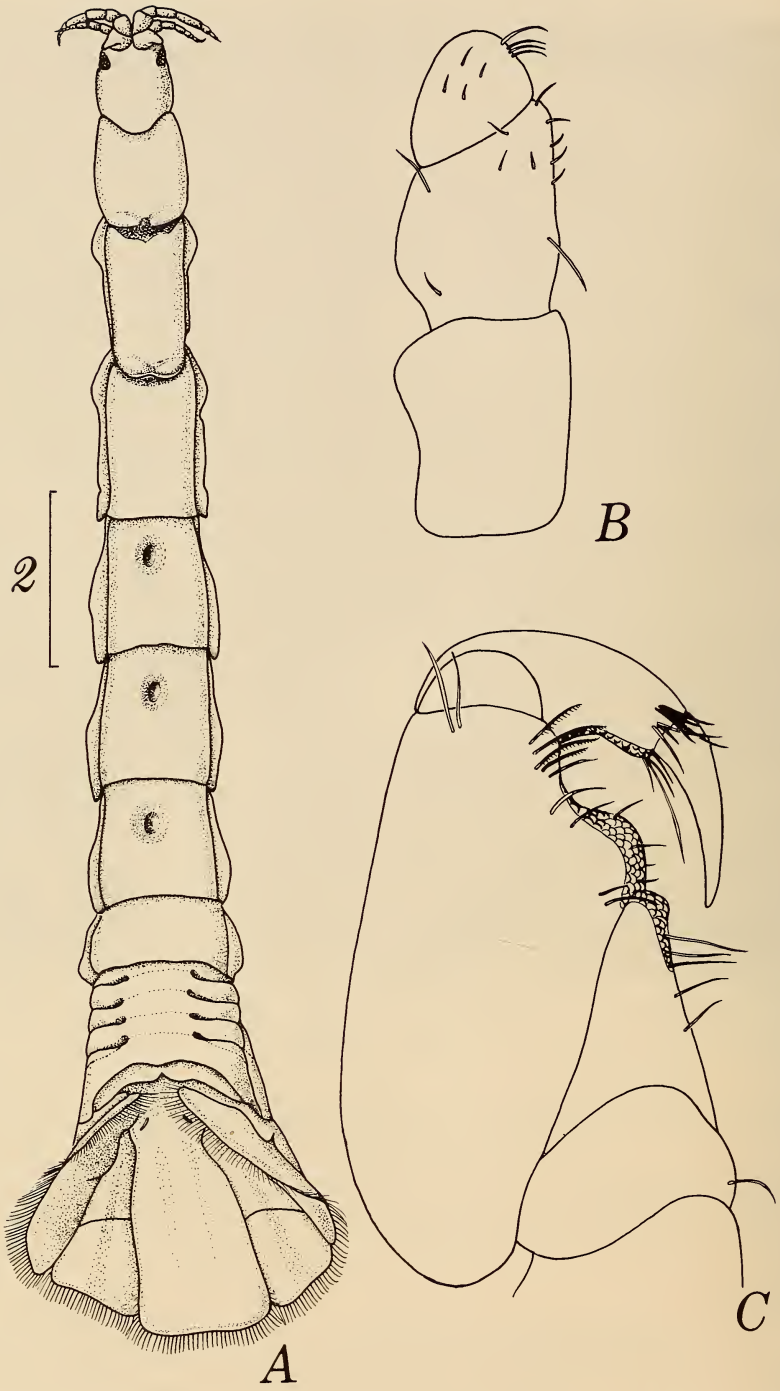

Fig. 16. *Haliophasma macrurum*. A. ♀ dorsal view. B. Maxilliped. C. Pereopod 1. Scale in mm.

Antennule with basal segment bearing conical, posteriorly-directed tooth-like process. Male unknown.

Type material

Holotype, SAM–A2667, non-ovig. ♀, ± 22 mm TL (telson sectioned by Barnard), Sea Point, Table Bay.

Other material

SAM–A12740, 2 juvs, 1 non-ovig. ♀, 28,0 mm, Lüderitz, intertidal. SAM–A14105, 1 juv., 15,2 mm, Strandfontein, Cape, intertidal. SAM–A14104,

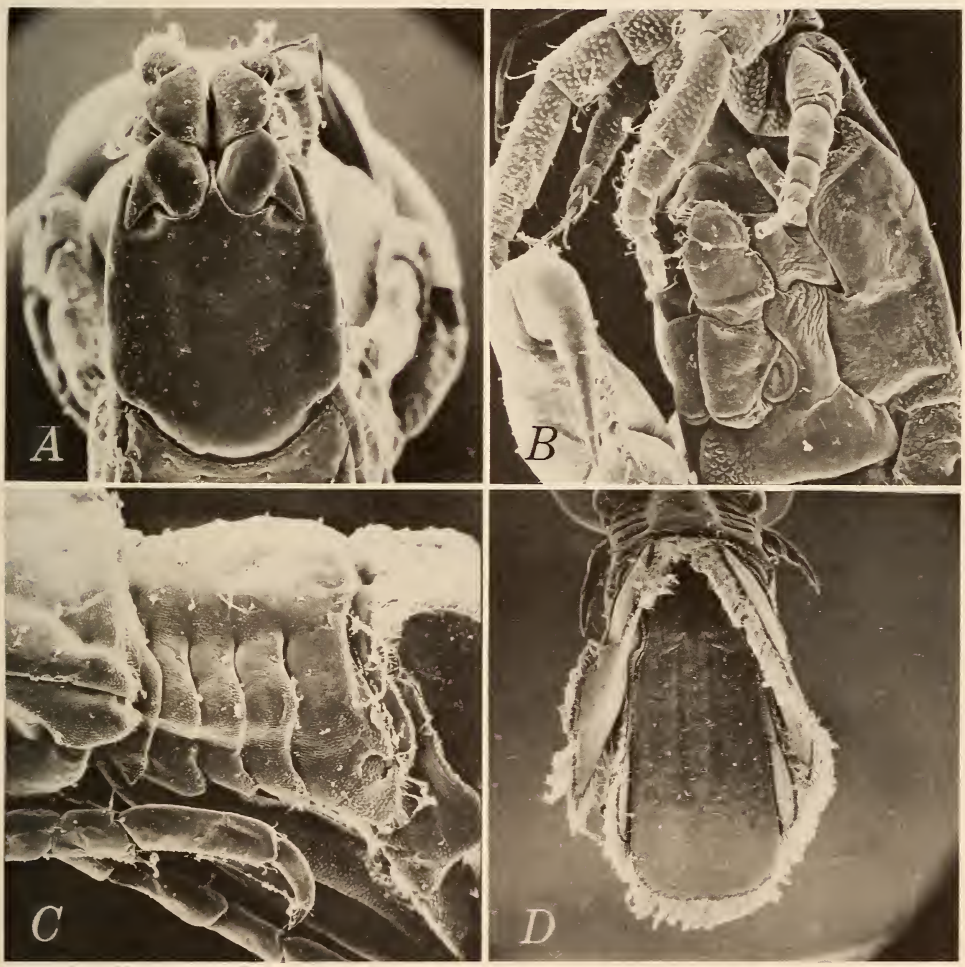

Fig. 17. *Haliophasma macrurum*. A. ♀ cephalon, dorsal view. B. Cephalon, lateral view. C. Pleon. D. Telson.

Fig. 18. *Haliophasma macrurum*. A. Pereopod 7. B. Pleopod 1 exopod. C. Statocyst apertures. D. Rounded bosses at base of pleopod 1.

1 juv., 17,0 mm, Kommetjie, Cape. SAM–A14103, 1 juv., 12,0 mm, locality unknown.

Distribution

Lüderitz to False Bay.

Remarks

Haliophasma macrurum has been found on several occasions in the tubes of the intertidal reef-building polychaete worm *Gunnerea capensis*, on which it probably preys. The cup-shaped and sclerotized tail fan neatly closes the tube mouth, affording the isopod protection while it feeds.

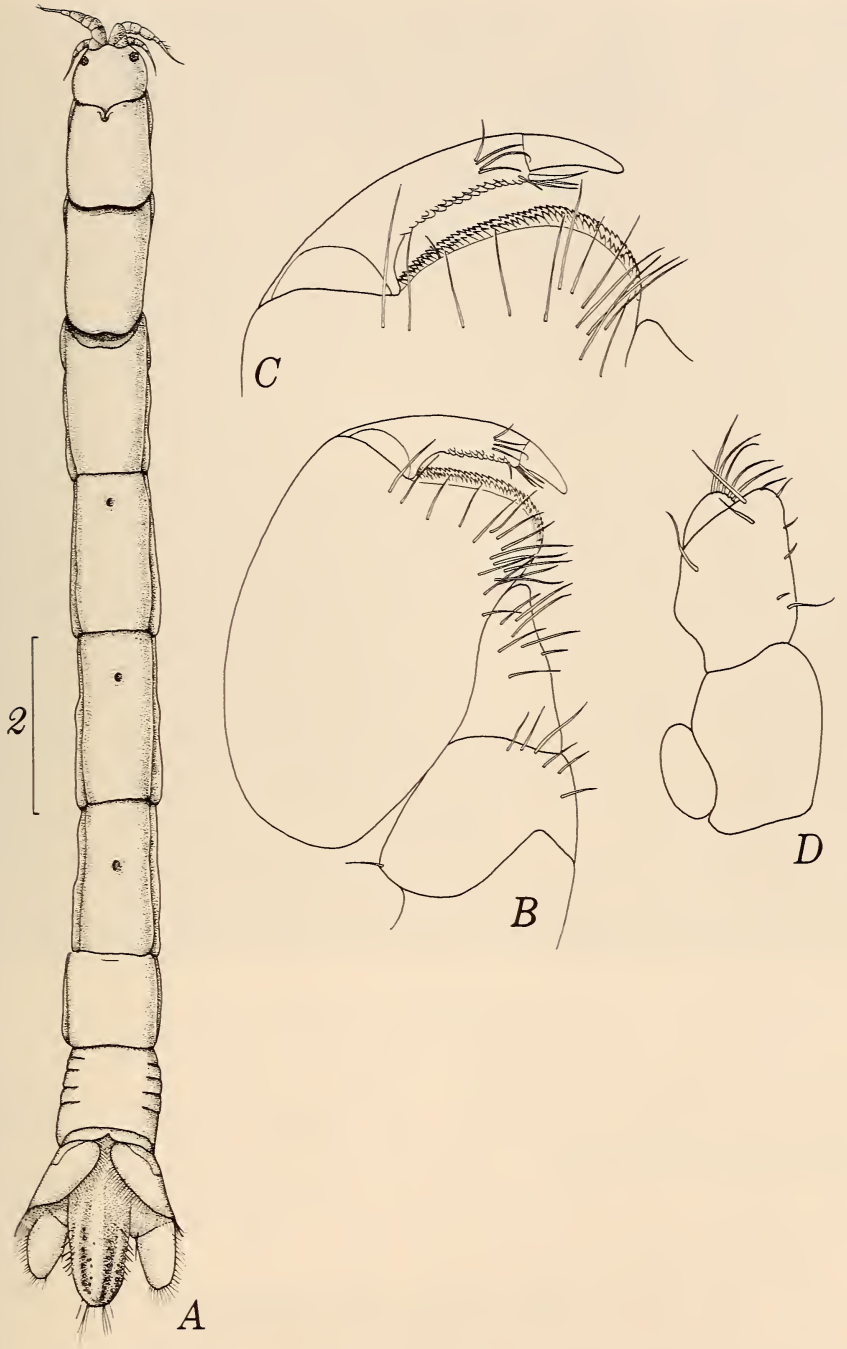

Fig. 19. *Haliophasma tricarinatum*. A. ♀ dorsal view. B. Pereopod 1 ♀. C. Dactylus and propodal palm of pereopod 1 ♀. D. Maxilliped. Scale in mm.

Haliophasma tricarinatum Barnard, 1925
Figs 19–20

Haliophasma tricarinata Barnard, 1925*a*: 132, pl. 4 (fig. 2); 1925*b*: 385; 1940: 490, 498; 1955: 50. Day, Field & Penrith, 1970: 47. Kensley, 1978*a*: 50, fig. 22D.
Haliophasma tricarinatum: Nierstrasz, 1941: 239. Poore, 1975: 532.

Diagnosis

Body slender. Pereonites 4–6 each with mid-dorsal pit. Telson with three dorsal rounded longitudinal ridges, with scattered pits between; strong longitudinal midventral keel; posterior margin broadly rounded. Basal antennular segment with outer margin rounded. Pereopod 1 propodal palm a broadly rounded lobe with rows of fine acute scales along margin. Male unknown.

Type material

Holotype, SAM–A5968, non-ovig. ♀, 14,0 mm, Agulhas Bank, 80 m.

Other material

SAM–A14188, 1 juv., off Saldanha Bay, 70 m. SAM–A14076, 1 juv., False Bay, 53 m. SAM–A14083, 1 juv., False Bay, 80 m. SAM–A14084, 1 juv., False Bay, 39 m. SAM–A14186, 1 non-ovig. ♀, False Bay. SAM–A14191, 1 juv., False Bay. SAM–A14192, 1 juv., False Bay, 48 m. SAM–A14093, 1 juv., Agulhas Bank, 183 m. SAM–A14101, 1 juv., Agulhas Bank, 73 m. SAM–A14190, 1 non-ovig. ♀, Agulhas Bank, 84 m. SAM–A5967, 1 non-ovig. ♀, off Cape St. Blaize, 84 m. SAM–A17509, 1 juv., off East London, 90 m.

Distribution

Saldanha Bay to south of East London, 48–183 m.

Kupellonura Barnard, 1925*a*

Diagnosis

Eyes small or absent. Mandibular palp three-segmented; molar relatively short. Maxilliped seven-segmented; endite well developed. Pereopods 1–3 subsimilar, subchelate; pereopods 4–7 with triangular carpus underriding propodus. Pleonites 1–6 elongate, free. Pleopod 1 similar to following pleopods, not operculiform.

Type species

Kupellonura mediterranea Barnard, 1925*a*.

Kupellonura capensis (Kensley, 1975*a*)
Fig. 21

Holoroanthura (sic) capensis Kensley, 1975*a*: 75, figs 19–20.
Horoloanthura capensis: Kensley, 1978*a*: 50, fig. 22 E–G.
Kensleyanthura capensis: Wägele, 1981: 106.

Fig. 20. *Haliophasma tricarinatum*. A. ♀ cephalon, dorsal view. B. Mouthparts. C. Pereopod 1. D. Telson.

Diagnosis

Eyes absent. Telson somewhat broadened in posterior half, then tapering to narrowly rounded apex; margin denticulate. Uropodal exopod folding over telson, with narrow distal extension; medial margin dentate.

Type material

Holotype, SAM–A13555, 1 ♂, 3,8 mm, off Lambert's Bay, 128 m. Allotype, SAM–A13624, 1 non-ovig. ♀, 6,1 mm, off Lambert's Bay, 400 m. Paratypes, SAM–A13625, 1 sub♂, 3,1 mm, 5 non-ovig. ♀, 4,2–5,0 mm, off Lambert's Bay, 172 m.

Other material

SAM–A14193, 1 non-ovig. ♀, off Saldanha Bay, 141 m. SAM–A14194, 2 non-ovig. ♀, off Saldanha Bay, 183 m. SAM–A14195, 4 non-ovig. ♀, off Saldanha Bay, 183 m. SAM–A14196, 1 non-ovig. ♀, off Lambert's Bay, 128 m. SAM–A14197, 1 non-ovig. ♀, Agulhas Bank, 183 m.

Distribution

Lambert's Bay to Agulhas Bank, 128–400 m.

Remarks

Horoloanthura irpex Menzies and Frankenberg, the type species of *Horoloanthura*, was incorrectly described and figured as having six free elongate pleonites and a five-segmented maxilliped lacking an endite. In fact, pleonite 6 is fused to the spiculate telson, and the maxilliped is seven-segmented, with a well-developed endite. Wägele (1981) correctly states that *H. irpex* should be in the genus *Neohyssura*. Thus *H. capensis*, which is not a *Neohyssura*, must be accommodated elsewhere. Wägele (1981) erected the new genus *Kensleyanthura* for *H. capensis*. Unfortunately, Kensley's description was inaccurate in the configuration of the maxilliped, which is seven-segmented with an endite. In fact, *H. capensis* agrees closely with *Kupellonura mediterranea* Barnard, and *K. serritelson* Wägele, 1981, in all features of the mouthparts, antennules, pleon, telson, and uropods.

Kupellonura capensis differs from *K. serritelson* in having a digitiform lobe on the uropodal exopod, and in having the uropodal endopod margins entire (the outer margin is serrulate in the Bermudan species). The telson of *K. capensis* is widest at about the distal third and is apically narrowly rounded. The telson of *K. serritelson* is widest at the midlength and distally broadly rounded.

Kupellonura mediterranea, of which the type from the Copenhagen Museum has been examined, has a telson similar in shape to *K. capensis* but with entire margins, except for a shallow subterminal notch on each side, and a uropodal exopod as in *K. serritelson*.

Malacanthura Barnard, 1925

Agulanthura Kensley, 1975*a*: 72.
Haliophasma: Barnard, 1925*a*: 131; 1940: 382; 1955: 50 (*partim*). Kensley, 1975*a*: 72. (*partim*).

Diagnosis

Eyes present. Antennular flagellum of three to six articles. Antennal flagellum of four to seven articles. Mandible with three-segmented palp; incisor, lamina dentata, and molar present. Maxilliped five-segmented, endite small to rudimentary, or absent. Pereopod 1 subchelate, propodus expanded. Pereopods 2–3 smaller than pereopod 1, ambulatory. Pereopods 4–7 with rectangular carpus not underriding propodus. Pleopod 1 exopod operculiform.

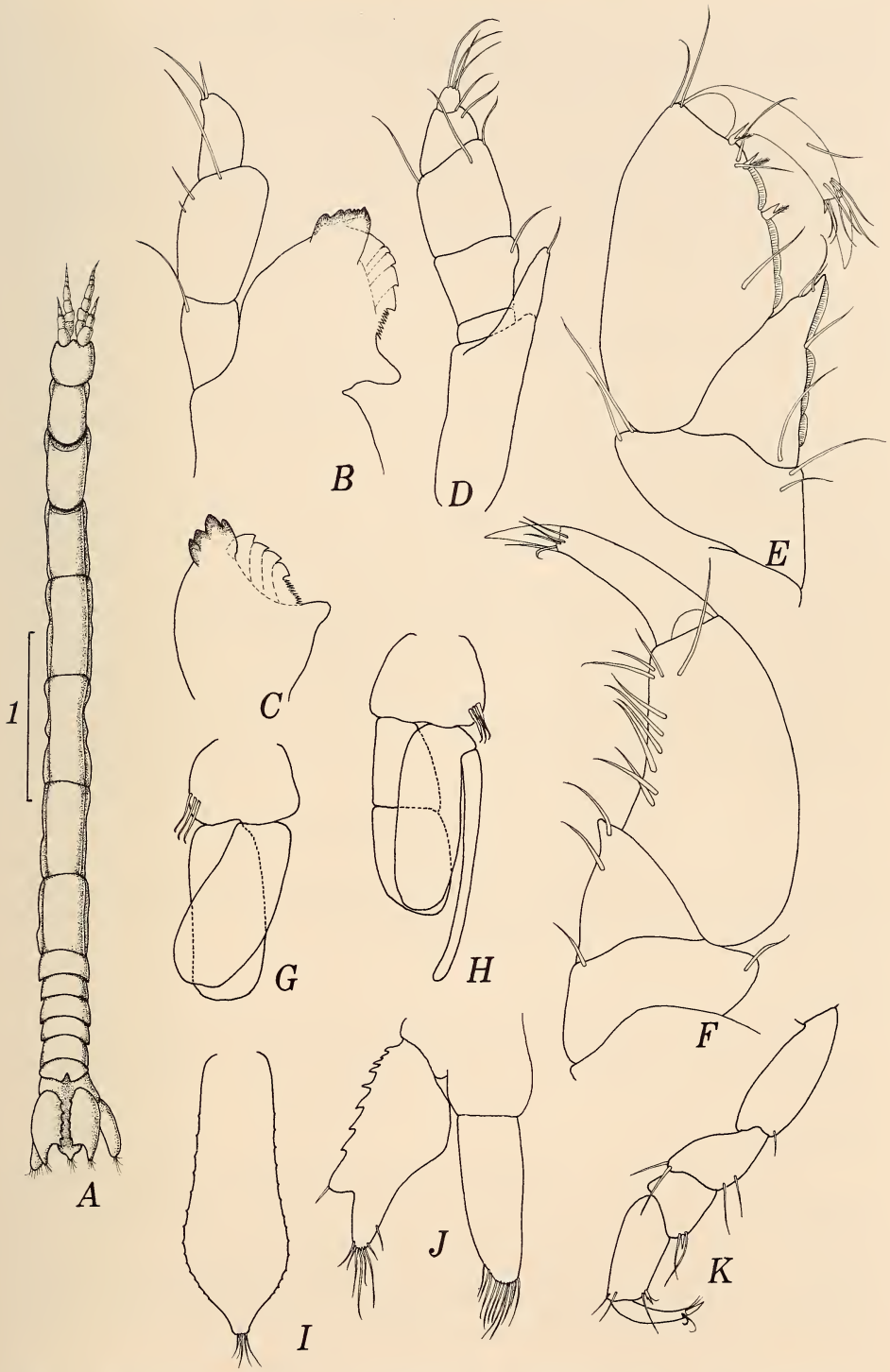

Fig. 21. *Kupellonura capensis*. A. ♀ dorsal view. B. Right mandible. C. Left mandibular incisor, lamina dentata, and molar. D. Maxilliped. E. Pereopod 1. F. Pereopod 2. G. Pleopod 1. H. Pleopod 2 ♂. I. Telson. J. Uropod. K. Pereopod 7. Scale in mm.

Pleonites 1–5 fused, pleonite 6 free. Telson with two basal statocysts. Pleon in male frequently more elongate than in female.

Remarks.

With Poore's 1975 redefinition of *Haliophasma*, it has become obvious that several of Barnard's species of *Haliophasma* belong to *Malacanthura* as now defined. Similarly, Kensley's *Agulanthura*, viewed in the light of the above redefinitions, is now regarded as a specialized *Malacanthura*.

Type species

Apanthura linguicauda Barnard, 1920.

KEY TO THE SOUTH AFRICAN SPECIES OF *MALACANTHURA*

1. Integument with numerous small pits 2
– Integument lacking numerous small pits 4
2. Telson unpitted, with single mid-dorsal ridge 3
– Telson pitted, obscurely tri-ridged ..... *foveolata*
3. Uropodal exopod distally strongly notched ..... *schotteae*
– Uropodal exopod oval-lanceolate, unnotched ..... *transkei*
4. Telson unsculptured 5
– Telson with mid-dorsal and/or lateral ridges 6
5. Telson dorsally convex; uropodal exopod closely adpressed to telson ..... *serenasinus*
– Telson dorsally flat; uropodal exopod freestanding, not adpressed to telson .... *linguicauda*
6. Telson dorsally concave, with very strong mid-dorsal ridge ..... *hermani*
– Telson dorsally flat or convex 7
7. Telson with faint lateral ridges, lacking mid-dorsal ridge ..... *ornata*
– Telson with faint lateral and mid-dorsal ridges 8
8. Telson almost as wide as long ..... *pseudocarinata*
– Telson almost twice as long as wide ..... *coronicauda*

Malacanthura coronicauda (Barnard, 1925)

Figs 22–23

Haliophasma coronicauda Barnard, 1925*a*: 132; 1925*b*: 386; 1940: 490, 498; 1955: 50. Nierstrasz, 1941: 239. Day, Field & Penrith, 1970: 47. Poore, 1975: 532. Kensley, 1975*a*: 38; 1978*a*: 49, fig. 21F. Christie, 1976: 155.

Diagnosis

Telson with mid-dorsal raised area, faintly tri-ridged. Pereopod 1 propodal palm with arcuate proximal lobe, numerous simple setae along inner palmar margin.

Description

Non-ovigerous female. Integument moderately indurate, dorsally smooth, lacking pits. Proportions: $C < 1 = 2 = 3 > 4 < 5 > 6 > 7$. Cephalon with low rostrum, rounded anterolateral corners, large dorsolateral eyes. Pleonites 1–5 fused, no indication of lines of fusion in dorsal view; posterior margin of pleonite 5 with slight mid-dorsal point; pleonite 6 free, with mid-dorsal notch in posterior margin. Telson with 2 basal statocysts, widest at midlength, distally

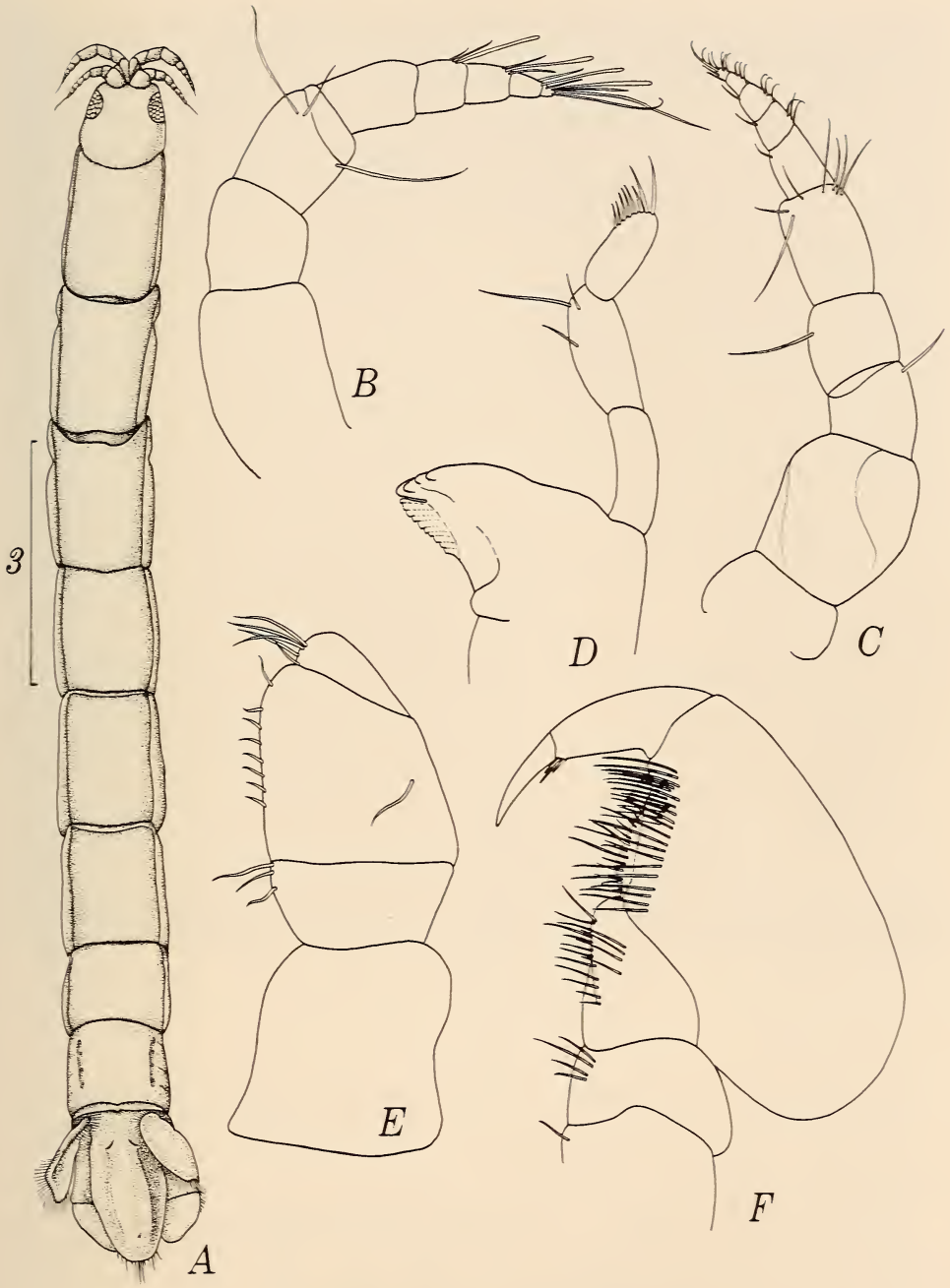

Fig. 22. *Malacanthura coronicauda*. A. ♀ dorsal view. B. Antennule. C. Antenna. D. Mandible. E. Maxilliped. F. Pereopod 1. Scale in mm.

broadly rounded with very low rounded mid-dorsal longitudinal ridge, and stronger lateral ridges.

Basal antennular segment equal to two distal segments together; flagellum of five articles. Antenna with segment 5 slightly longer than 4; flagellum of six articles. Mandibular palp three-segmented; molar low, rounded. Maxilliped five-segmented, terminal segment short, set obliquely on penultimate segment; latter with row of short medial setae; endite lacking. Pereopod 1 unguis more than half length of remainder of dactylus; propodus expanded, palm with low convex lobe proximally bearing setae, inner palmar margin with numerous simple setae. Pereopods 2–3 ambulatory; pereopods 4–7 with rectangular carpi; propodi, carpi, and meri with elongate setae on posterior margins. Pleopod 1 exopod operculiform, bearing numerous plumose setae distally, with strong groove on outer surface close to median line. Uropodal exopod just reaching distal margin of basis, apically narrowly rounded, with distinct sinuosity distally; endopod triangular, distally rounded.

Type material

Syntypes, SAM–A5962, 2 non-ovig. ♀, 16,0 mm, off Saldanha Bay, 174 m.

Other material

SAM–A14131, 1 juv., off Saldanha Bay, 82 m. SAM–A14135, 1 juv., off Saldanha Bay, 84 m. SAM–A14141, 1 ♂, off Saldanha Bay 141 m. SAM–A14144, 1 ♂, off Saldanha Bay, 146 m. SAM–A14146, 1 ♂, 2 non-ovig. ♀, off Saldanha Bay, 146 m. SAM–A14169, 1 non-ovig. ♀, off Saldanha Bay, 79 m. SAM–A14171, 1 non-ovig. ♀, off Saldanha Bay, 148 m. SAM–A14177, 1 ♂, off Saldanha Bay, 148 m. SAM–A14119, 1 non-ovig. ♀, False Bay, 26 m. SAM–A14125, 1 juv., False Bay, 81 m. SAM–A14127, 1 ♂, False Bay, 87 m. SAM–A14129, 2 non-ovig. ♀, False Bay, 80 m. SAM–A14130, 1 sub♂, 1 non-ovig. ♀, False Bay. SAM–A14132, 1 non-ovig. ♀, False Bay, 102 m. SAM–A14134, 1 ♂, 1 non-ovig. ♀, False Bay. SAM–A14136, 1 ♂, 3 non-ovig. ♀, False Bay, 82 m. SAM–A14137, 2 non-ovig. ♀, False Bay 71 m. SAM–A14138, 1 ♂, False Bay. SAM–A14140, 1 non-ovig. ♀, False Bay. SAM–A14142, 1 ♂, 1 non-ovig. ♀, False Bay SAM–A14143, 4 non-ovig. ♀, 1 juv., False Bay, SAM–A14145, 2 ♂, False Bay. SAM–A14147, 1 ♂, False Bay. SAM–A14149, 4 non-ovig. ♀, 2 juvs, False Bay. SAM–A14150, 2 ♂, 4 non-ovig. ♀, False Bay. SAM–A14151, 1 juv., False Bay. SAM–A14152, 1 non-ovig. ♀, False Bay. SAM–A14167, 3 non-ovig. ♀, 1 juv., False Bay, 53 m. SAM–A14168, 1 non-ovig. ♀, 1 juv., False Bay. SAM–A14170, 5 non-ovig. ♀, False Bay. SAM–A14172, 1 juv., False Bay, 53 m. SAM–A14173, 1 ♂, False Bay. SAM–A14174, 3 non-ovig. ♀, False Bay, 85 m. SAM–A14178, 2 non-ovig. ♀, False Bay, 87 m. SAM–A14179, 1 non-ovig. ♀, False Bay, 73 m. SAM–A14111, 1 non-ovig. ♀, Still Bay, 80 m. SAM–A14124, 1 non-ovig. ♀, Still Bay, 80 m. SAM–A14153, 1 ♂, 2 juvs, Agulhas Bank, 97 m. ZMC 51.68,

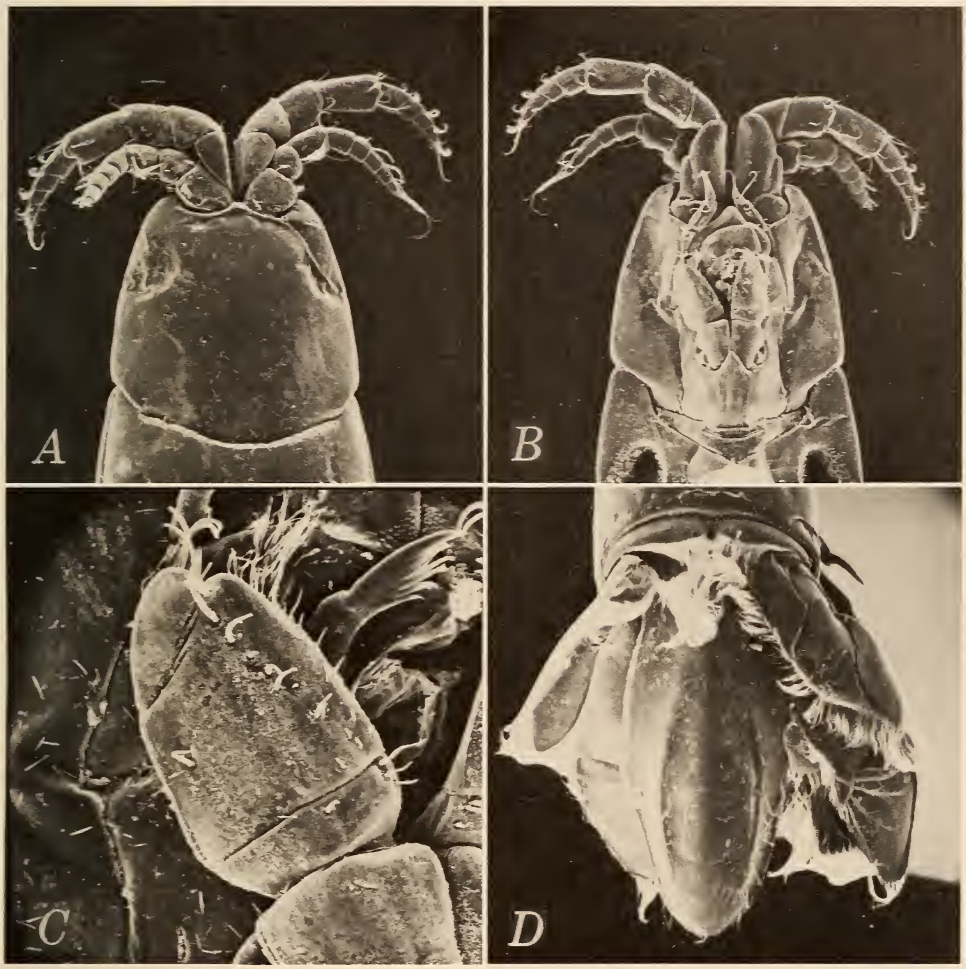

Fig. 23. *Malacanthura coronicauda*. A. ♀ cephalon, dorsal view. B. ♀ cephalon, ventral view. C. Maxilliped. D. Telson and uropods.

Th. Mortensen Expedition, 1 ♂, False Bay. ZMC, *Galathea* Expedition, station 165, 1 ♂, 1 juv., False Bay.

Distribution

Saldanha Bay to Agulhas Bank, 26–174 m.

Malacanthura foveolata (Barnard, 1940)
Figs 24–25

Haliophasma foveolata Barnard, 1940: 384, 490, 498, fig. 2; 1955: 50, fig. 24 a–c. Day, Field & Penrith, 1970: 47. Poore, 1975: 532. Kensley, 1975*a*: 38; 1978*a*: 49. Wägele, 1981: 86.

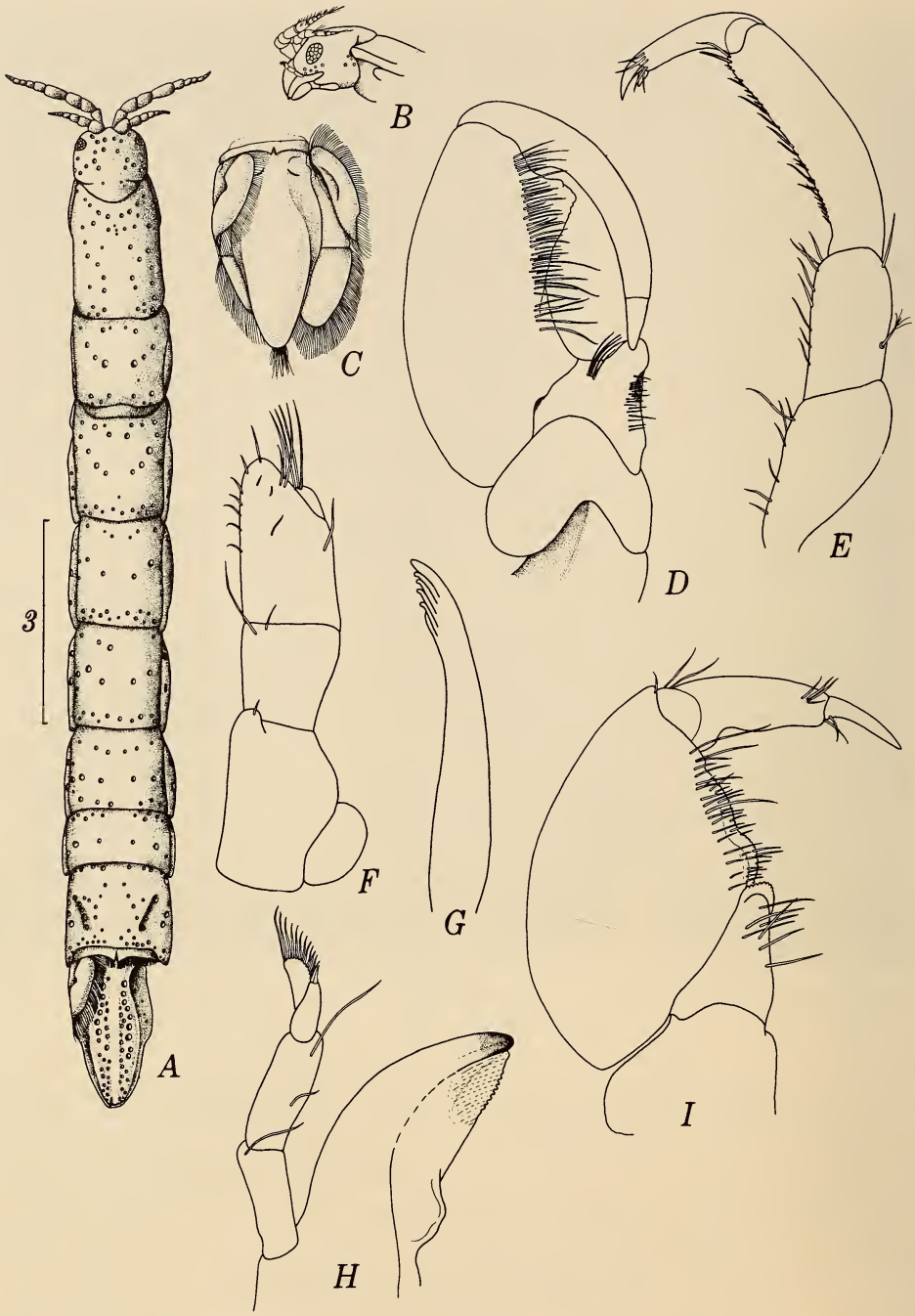

Fig. 24. *Malacanthura foveolata*. A. ♀ dorsal view. B. Cephalon, lateral view. C. ♂ telson. D. Pereopod 1 ♂. E. Pereopod 7. F. Maxilliped. G. Maxilla. H. Mandible. I. Pereopod 1 ♀. Scale in mm.

Diagnosis

Body strongly indurate, with numerous small scattered pits. Telson in female constricted at midlength, with rounded mid-dorsal longitudinal and lower lateral ridges, several pits between ridges. Telson in male similar in outline to female, but ridges less marked, pits lacking. Pereopod 1 in female with propodal palm somewhat sinuous, setose; in male, propodal palm deeply concave, with distal broadly triangular process; band of simple setae on inner surface near palmar margin.

Type material

Holotype, SAM–A8280, 1 non-ovig. ♀, 12,1 mm, Port Elizabeth, intertidal.

Other material

SAM–A14158, 8 juvs, Saldanha Bay, 5 m. SAM–A14162, 1 non-ovig. ♀, Saldanha Bay, 24 m. SAM–A14180, 1 ♂, Saldanha Bay, 35 m. SAM–A14322, 1 non-ovig. ♀, off Saldanha Bay. SAM–A14397, 2 non-ovig. ♀, off Saldanha Bay, 79 m. SAM–A14849, 1 sub♂, Langebaan Lagoon. SAM–A14155, 1 ♂, False Bay. SAM–A14159, 1 non-ovig. ♀, False Bay, 31 m. SAM–A14160, 1 non-ovig. ♀, False Bay, 73 m. SAM–A14161, 3 juvs, False Bay. SAM–A14163, 1 non-ovig. ♀, False Bay, 5 m. SAM–A14164, 1 sub♂, False Bay, 40 m. SAM–A14165, 1 non-ovig. ♀, False Bay. SAM–A14166, 1 non-ovig. ♀, False Bay, 22 m. SAM–A14846, 1 non-ovig. ♀, False Bay. SAM–A14950, 1 non-ovig. ♀, False Bay. SAM–A14156, 1 non-ovig. ♀, Agulhas Bank, 27 m. SAM–A14157, 1 non-ovig. ♀, off Still Bay, 120 m.

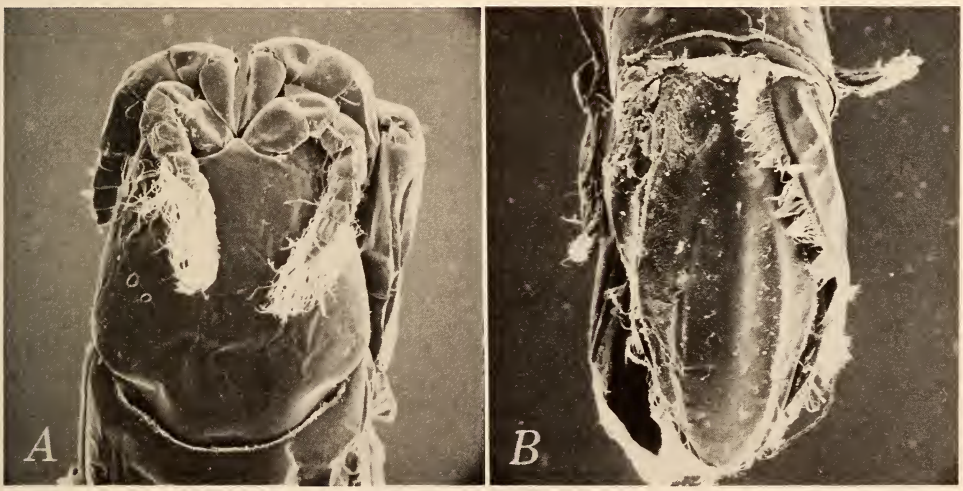

Fig. 25. *Malacanthura foveolata*. A. Cephalon ♂ dorsal view. B. Telson ♂.

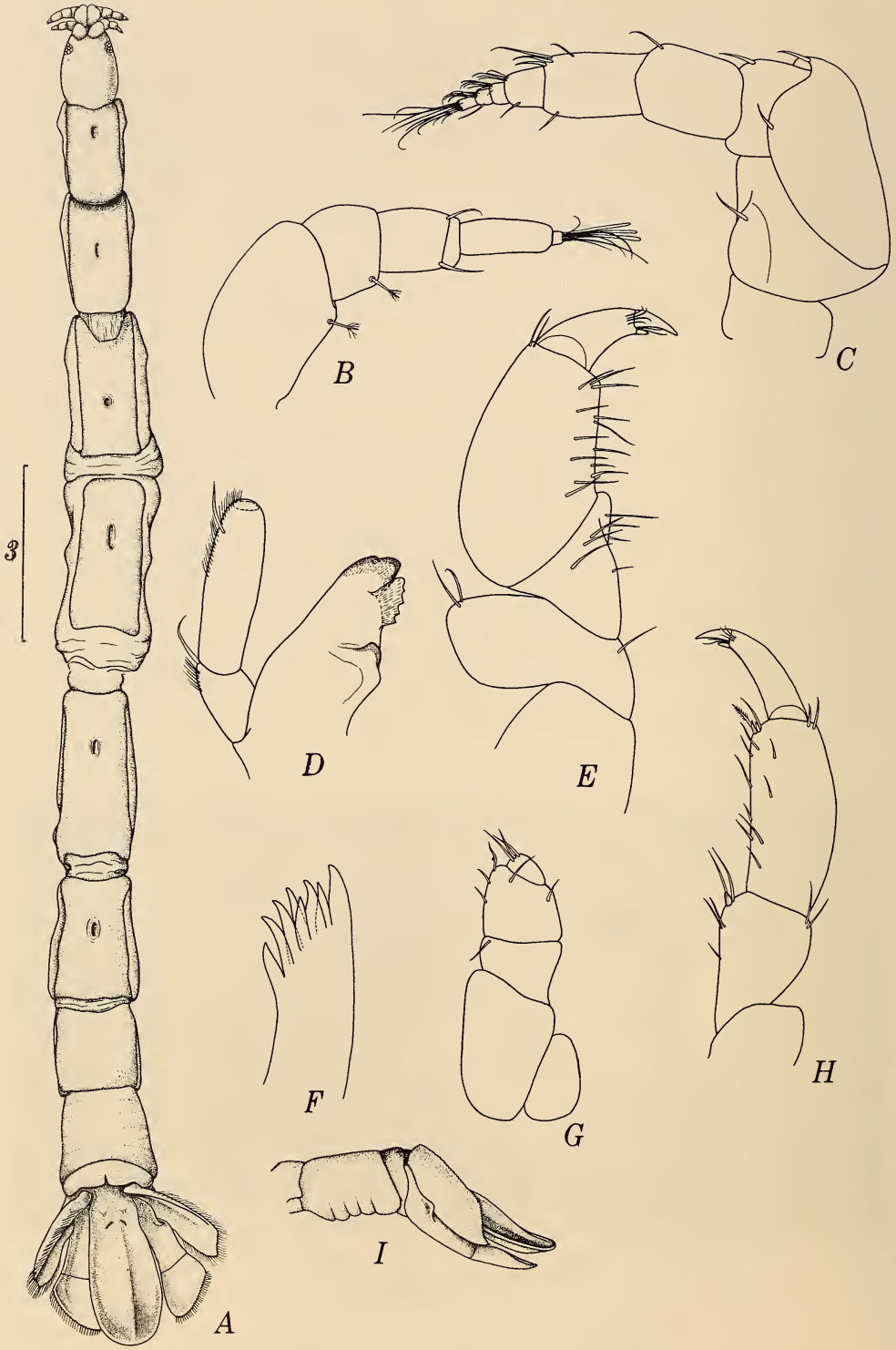

Fig. 26. *Malacanthura hermani*. A. ♀ dorsal view. B. Antennule. C. Antenna. D. Mandible (distal palp segment missing). E. Pereopod 1. F. Maxilla. G. Maxilliped. H. Pereopod 7. I. Pleon lateral view. Scale in mm.

Distribution

Saldanha Bay to Port Elizabeth, intertidal to 120 m.

Remarks

There is a marked loss of integumental pits as specimens increase in size, especially in the transition from female to submale to male.

Malacanthura hermani (Barnard, 1940)
Fig. 26

Haliophasma hermani Barnard, 1940: 383, 490, 498, fig. 1; 1955: 50. Poore, 1975: 532. Kensley, 1978*a*: 49, fig. 22A.

Diagnosis

Mid-dorsal pits on pereonites 1–6. Telson distally broadly rounded, dorsally concave, with strong mid-dorsal longitudinal carina, and strong midventral carina. Pereopod 1 propodal palm almost straight, sparsely setose. Posterior margins of uropodal rami finely denticulate. Male unknown.

Type material

Holotype, SAM–A8076, non-ovig. ♀, 20,0 mm, Hermanus, Cape.

Distribution

Known from type locality only.

Remarks

The single known specimen was taken from a cavity in the base of an *Allopora* sp. coral.

Malacanthura linguicauda (Barnard, 1920)
Fig. 27

Anthura linguicauda Barnard, 1920: 338.
Malacanthura linguicauda: Barnard, 1925*a*: 133 (*partim*); 1940: 497 (*partim*). Nierstrasz, 1941: 240 (*partim*). Kensley, 1978*a*: 52, fig. 23A.
Non Malacanthura linguicauda: Barnard, 1925*b*: 388.

Diagnosis

Integument hardly indurate. Pereonites 4–6 each with mid-dorsal elongate pit. Pleonites 1–5 fused, lines of fusion indicated by faint lateral grooves; pleonite 6 free. Telson oval in outline, distally rounded, dorsally very gently convex. Maxilliped with short endite. Uropodal exopod with sinuous outer distal margin.

Description

Male. Integument hardly indurate. Proportions: $C < 1 = 2 > 3 < 4 = 6 > 7$. Cephalon with large dorsolateral eyes. Anterior margin of pereonites 2 and 3 with rectangular depression for articulation. Slit-like mid-dorsal pit present on

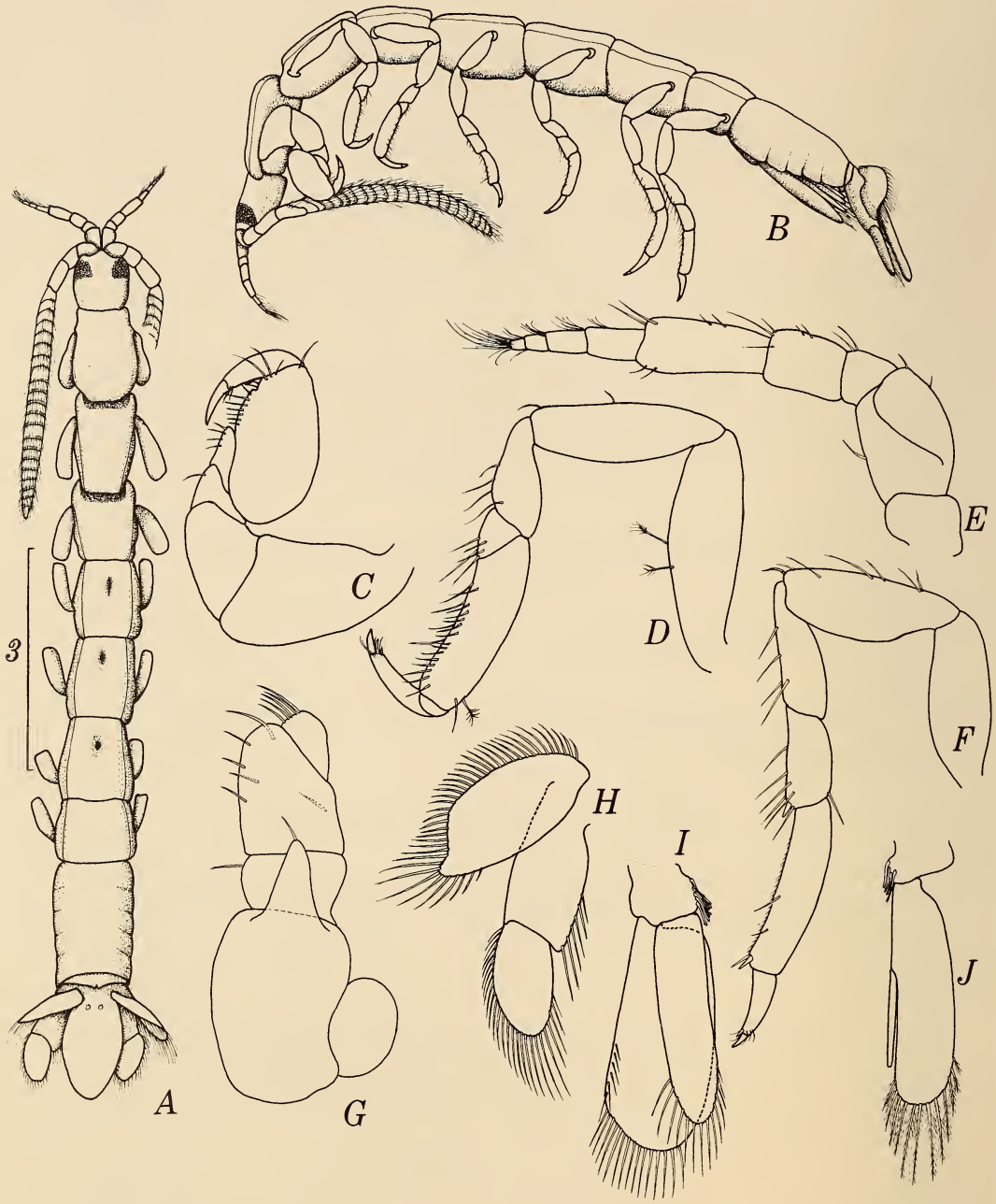

Fig. 27. *Malacanthura linguicauda*. A. ♂ dorsal view. B. ♂ lateral view. C. Pereopod 1 ♂. D. Pereopod 2. E. Antenna. F. Pereopod 7. G. Maxilliped. H. Uropod. I. Pleopod 1. J. Pleopod 2 ♂ endopod. Scale in mm.

pereonites 4–6. Pleonites 1–5 fused, pleonites indicated ventrolaterally by short slits; pleonite 6 free, with small mid-dorsal notch in posterior margin. Telson elongate-oval, posteriorly rounded, dorsally gently convex, with two proximal statocysts.

Antennular peduncle three-segmented, basal segment broadest; flagellum of twenty to twenty-two articles bearing whorls of aesthetascs, reaching back to pereonite 3. Antennal peduncle five-segmented, segment 2 broadest, grooved to accommodate antennule; flagellum of four articles. Maxilliped five-segmented, terminal segment set obliquely on segment 4, with five setae on medial margin; segment 4 with few setae on medial margin; endite on inner surface reaching base of segment 4, triangular, with single distal seta. Pereopod 1 unguis one-third length of rest of dactylus; dactylus with small posterior lobe on inner margin; propodal palm convex, with distal notch and row of six to eight setae. Pereopod 2 unguis one-fourth length of rest of dactylus, with two small basal spines; propodus elongate-rectangular, with several setae on posterior margin; carpus short, triangular. Pereopods 4–7 with posterodistal spine on carpus and propodus; carpus half length of, and not underriding propodus. Pleopod 1 exopod operculiform; endopod half width and three-fourths length of exopod; basis with eight retinaculae. Pleopod 2 endopod with simple rod-like copulatory stylet on medial margin not reaching distal end of ramus; basis with four retinaculae. Uropodal exopod reaching to distal margin of basis, outer margin distally sinuous, bearing numerous plumose setae; endopod oval, bearing numerous plumose setae.

Type material

Holotype, SAM–A4172, ♂, 11,0 mm, off Umhlangakulu River, Natal, 100 m.

Distribution

Off Natal, 100 m.

Remarks

The specimen recorded by Barnard (1925*b*: 388) from off the Cape Peninsula, bears four short proximal lobes on the inner margin of the dactylus of pereopod 1, as well as a strong posteriorly-directed spine-like process on the basal antennular segment. Neither of these features is present in the holotype of *M. linguicauda*. As this specimen is a submale, and shows these differences, it cannot be considered the same species.

The holotype was dissected, probably by Barnard, and the mandible and maxilla have not been located.

Malacanthura ornata (Barnard, 1957)

Fig. 28

Haliophasma ornatum Barnard, 1957: 3, fig. 2. Poore, 1975: 531. Kensley, 1978*a*: 50, fig. 22B.

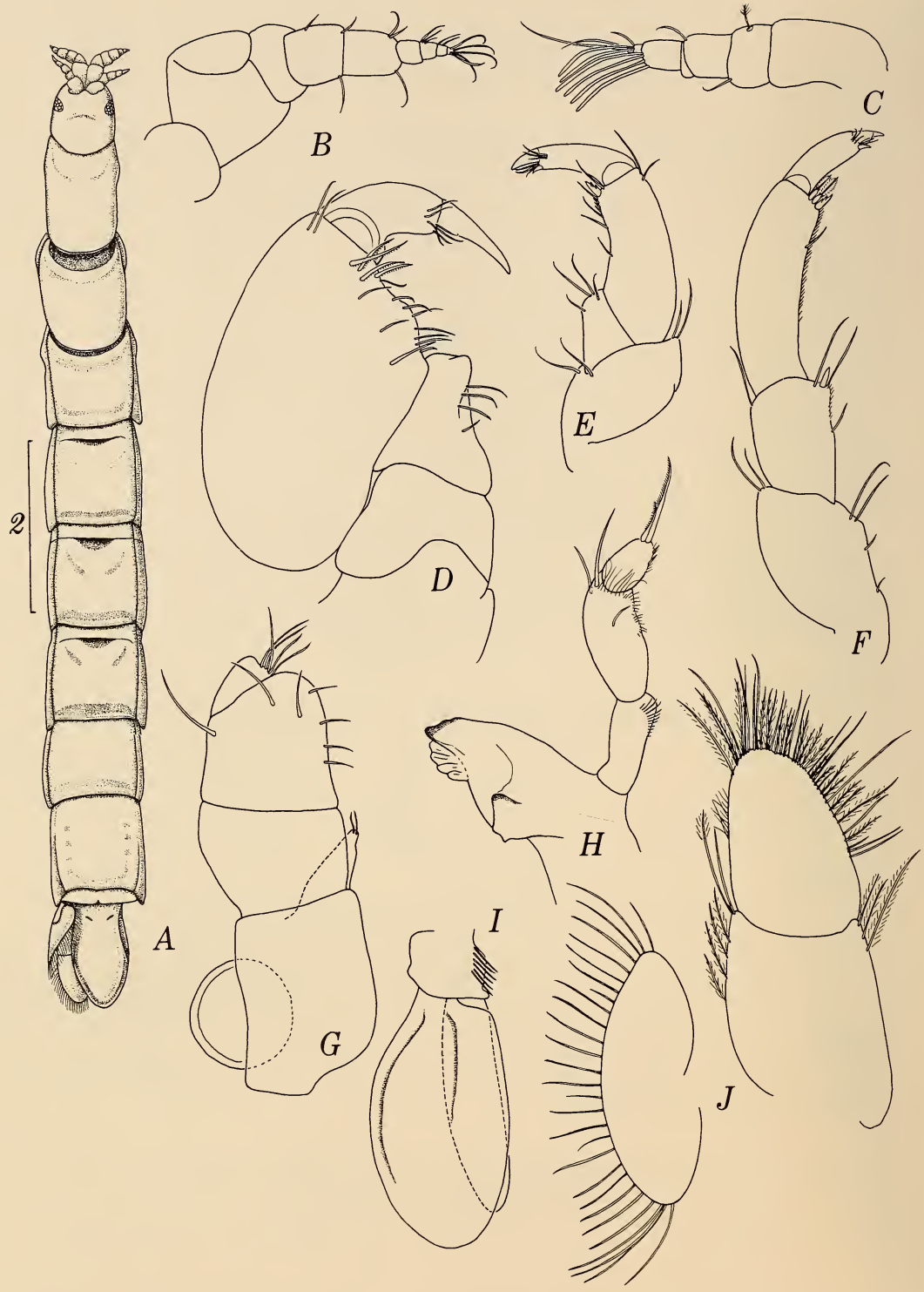

Fig. 28. *Malacanthura ornata*. A. ♀ dorsal view. B. Antenna. C. Antennule. D. Pereopod 1. E. Pereopod 2. F. Pereopod 7. G. Maxilliped. H. Mandible. I. Pleopod 1. J. Uropod. Scale in mm.

Diagnosis

Body lacking sculpture. Telson dorsally gently convex, lacking mid-dorsal ridge, with slight lateral flange, distally broadly rounded. Pereopod 1, unguis only a little shorter than rest of dactylus; propodus broadly expanded, palm with low proximal convexity, bearing few setae and spines. Maxilliped with small bisetose endite. Male unknown.

Type material

Holotype, SAM–A10599, non-ovig. ♀ (with eggs in body cavity), 10,0 mm, Mouille Point, Table Bay, intertidal.

Other material

SAM–A14181, 1 non-ovig. ♀, 9,5 mm, off Cape Point.

Distribution

Table Bay, west coast of Cape Peninsula, intertidal.

Malacanthura pseudocarinata (Barnard, 1940)
Fig. 29

Haliophasma pseudocarinata Barnard, 1940: 385, 490, 498, fig. 3a–c; 1955: 5, 50. Day, Field & Penrith, 1970: 47. Poore, 1975: 531. Kensley, 1978*a*: 50, fig. 22C.

Diagnosis

Integument indurate, with small pits only noticeable on cephalon, pleon, and first pleopods. Pleonite 6 fused with telson dorsally, fusion line visible. Telson broad, with strong lateral ridge and barely noticeable mid-dorsal longitudinal ridge. Pereopod 1 propodal palm faintly sinuous, denticulate; row of finely fringed setae on inner propodal surface near palm in female. Male unknown.

Type material

Holotype, SAM–A8281, non-ovig. ♀, 17,0 mm, Port Elizabeth, intertidal.

Other material

SAM–A14323, 1 juv., 9,1 mm, off Saldanha Bay. SAM–A14184, 1 juv., 9,6 mm, False Bay. SAM–A14154, 1 juv., 6,0 mm, Port Elizabeth. SAM–A14182, 1 non-ovig. ♀, 19,2 mm, locality unknown.

Distribution

Saldanha Bay to Port Elizabeth, intertidal to 4 m.

Remarks

The single specimen from off Saldanha Bay has numerous rhizocephalan parasites attached to the ventral pereon.

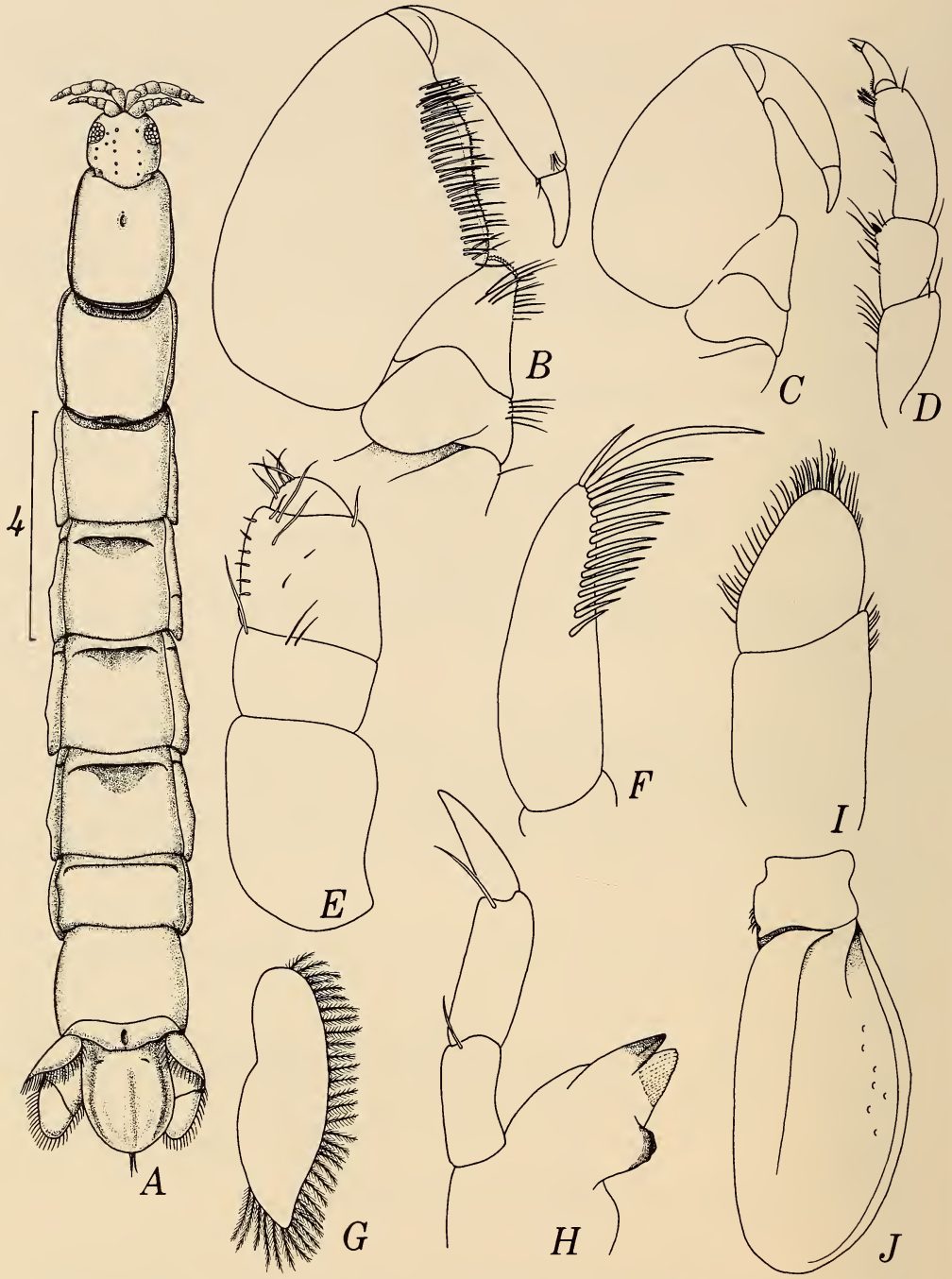

Fig. 29. *Malacanthura pseudocarinata*. A. ♀ dorsal view. B. Pereopod 1 inner view. C. Pereopod 1 outer view. D. Pereopod 7. E. Maxilliped. F. Distal mandibular palp segment. G. Uropodal exopod. H. Mandible. I. Uropodal basis and endopod. J. Pleopod 1 exopod. Scale in mm.

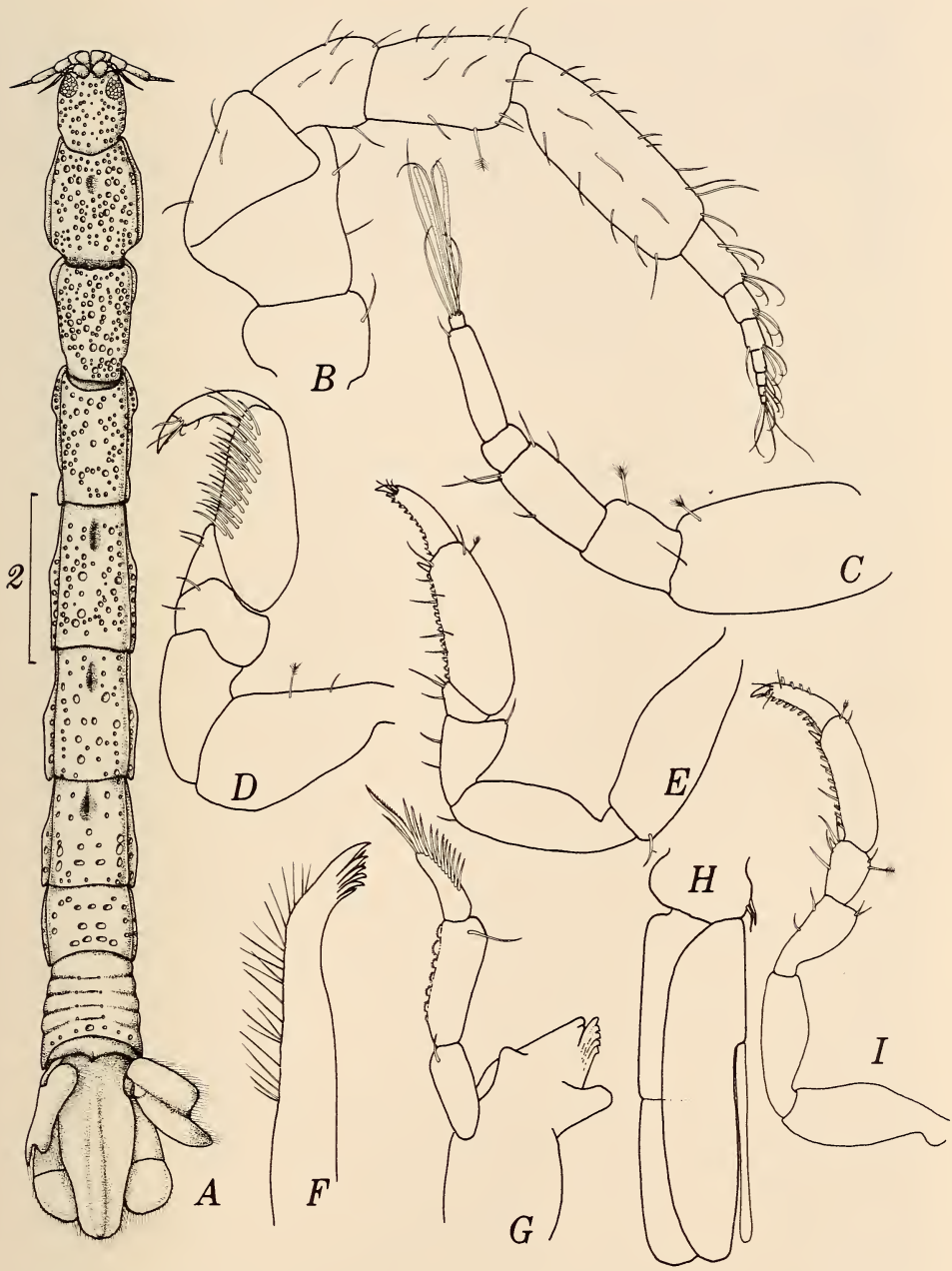

Fig. 30. *Malacanthura schotteae*. A. ♀ dorsal view. B. Antenna. C. Antennule. D. Pereopod 1 ♂. E. Pereopod 2. F. Maxilla. G. Mandible. H. Pleopod 2 ♂. I. Pereopod 7. Scale in mm.

Malacanthura schotteae sp. nov.
Figs 30–31

Diagnosis

Integument indurate, bearing numerous pits. Pereopod 1 propodus greatly expanded proximally in female; dactylus with rounded scaled lobe at base of unguis in female, absent in male. Telson narrow, widest at proximal third, with strong rounded mid-dorsal longitudinal ridge; posterior margin broadly rounded. Uropodal exopod with strong notch in outer margin.

Description

Non-ovigerous female. Integument indurate, with numerous small pits, each containing single sensory seta; pits less numerous on posterior pereonites. Proportions: $C < 1 = 2 = 3 < 4 > 5 > 6 > 7$. Cephalon with large eyes; well-developed rounded rostrum. Pereonites 4–6 with large mid-dorsal slit-like pit. Pleonites 1–5 fused, fusion indicated laterally by shallow grooves; pleonite 6 free, with mid-dorsal slit in posterior margin. Telson narrowed in posterior half, posterior margin broadly rounded, with strong rounded longitudinal mid-dorsal ridge; cuticular scales becoming more developed in posterior half; margin with many finely fringed setae.

Antennule with three-segmented peduncle; flagellum of three articles, article 2 longer than 1 and 3 together; distal article bearing two aesthetascs. Antennal peduncle segment 2 strongly grooved; segment 5 longest; flagellum of seven setose articles. Mandibular palp three-segmented, distal segment bearing twelve fringed spines, subterminal spine longest; incisor of two cusps; lamina dentata with five serrations; molar rounded. Maxilla with eight distal spines. Maxilliped five-segmented, distal segment semicircular, fringed with setae. Pereopod 1 strongly subchelate; unguis almost half length of rest of dactylus; latter with rounded lobe on inner margin bearing fringed scales at base of unguis; propodus expanded, elongate, pitted, with proximal rounded lobe of palm bearing fringed scales. Pereopod 2 much less robust than pereopod 1. Pereopods 5–7 with carpus roughly rectangular. Pleopod 1 exopod operculiform, outer surface pitted and bearing longitudinal groove; fringed with elongate plumose setae.

Male. Body indurate, relatively more slender than female; telson not as markedly narrowed posteriorly as in female. Eyes relatively larger than in female. Antennule elongate, reaching posteriorly to end of pereonite 1, with numerous whorls of filiform aesthetascs. Pereopod 1 not robust, dactylus and propodus lacking scaled rounded lobe as in female; propodal inner surface with numerous minutely fringed setae. Pleopod 2 endopod with slender rod-like copulatory stylet not quite reaching distal end of ramus.

Type material

Holotype, SAM–A17525, non-ovig. ♀, 12,5 mm, south of East London, 90 m. Allotype, SAM–A17526, 1 ♂, 8,4 mm, south of East London, 90 m.

Fig. 31. *Malacanthura schotteae*. A. Cephalon ♀ dorsal view. B. Cephalon ♀ ventral view. C. Maxilliped. D. Pereopod 1. E. Dactylus pereopod 1. F. Ventral pleon.

Paratype, SAM–A17527, 1 non-ovig. ♀, 6,5 mm, 10 juvs, south of East London, 90 m. Paratype, USNM 189055, 1 non-ovig. ♀, 7,6 mm, south of East London, 90 m. Paratype, SAM–A17528, 1 non-ovig. ♀, 8,3 mm, off Transkei, 150–200 m. Paratype, USNM 189056, 1 non-ovig. ♀, 9,0 mm, off Transkei, 150–200 m.

Other material

SAM–A14094, 1 non-ovig. ♀, 10,8 mm, off Still Bay, 80 m. SAM–A14080, 1 non-ovig. ♀, 11,5 mm, off Still Bay, 120 m. SAM–A14099, 1 juv., off Still Bay, 120 m. SAM–A17259, 1 non-ovig. ♀, off Transkei, 710–775 m.

Distribution

Still Bay to Transkei, 80–775 m.

Etymology

The species is named for Marilyn Schotte, of the Department of Invertebrate Zoology, Smithsonian Institution, in appreciation of the many illustrations she executed for this paper.

Remarks

Of the seven earlier-described species of *Malacanthura*, only *M. foveolata* has an integument as densely pitted as in the two new species described here. The telson of *M. foveolata*, however, is obscurely tri-ridged, with pits between the ridges, while *M. schotteae* and *M. transkei* have a single mid-dorsal ridge and no pits on the telson.

Malacanthura schotteae has a strongly notched uropodal exopod, a posteriorly constricted telson, and scaled lobes on the dactylus and propodal palm, while *M. transkei* has an unnotched oval-lanceolate uropodal exopod, evenly convex telsonic margins, and lacks propodal and dactylar lobes in pereopod 1. *Malacanthura transkei* also has mid-dorsal depressions on pereonites 2 and 3, not seen in *M. schotteae*.

Malacanthura serenasinus (Kensley, 1975)

Figs 32–33

Agulanthura serenasinus Kensley, 1975*a*: 72, fig. 18; 1978: 46, fig. 20B–E.

Diagnosis

Body profile smooth; uropodal exopods closely adpressed to telson; latter with gentle ventral curvature in posterior half, lanceolate, dorsally convex, posterior margin narrowly rounded. Eyes small, weakly pigmented. Antennular

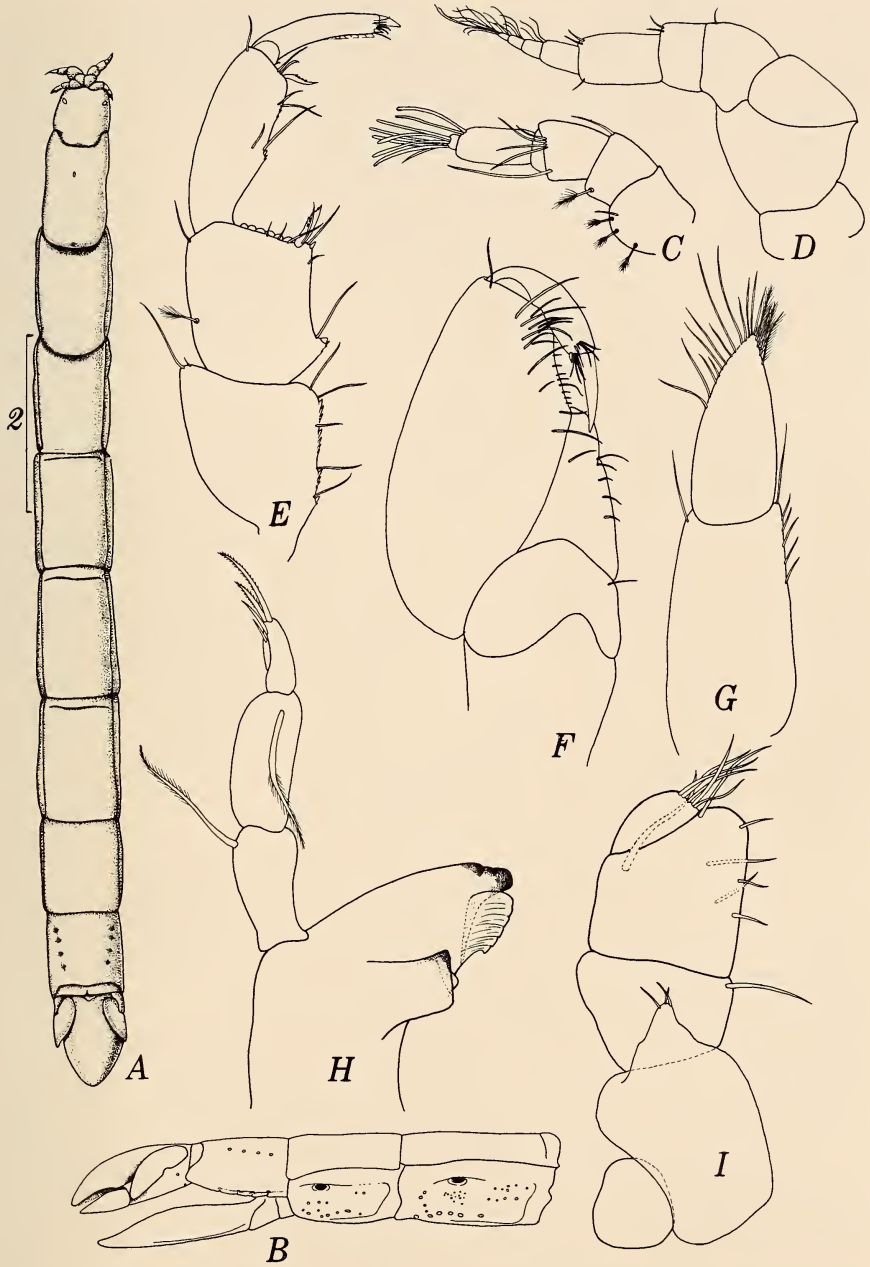

Fig. 32. *Malacanthura serenasinus*. A. ♀ dorsal view. B. Pereonites 6 and 7, and pleon lateral view. C. Antennule. D. Antenna. E. Pereopod 7. F. Pereopod 1. G. Uropodal basis and endopod. H. Mandible. I. Maxilliped. Scale in mm.

flagellum in female with two articles. Antennal flagellum of four articles. Pereopod 1 propodus expanded, palm slightly concave in female, slightly convex in male. Pereopods 4–7 with carpi and meri expanded, rectangular. Maxilliped five-segmented with small endite.

Type material

Holotype, SAM–A13553, 1 ♂, 11,0 mm, False Bay, 62 m. Allotype, SAM–A13554, 1 non-ovig. ♀, 14,5 mm, False Bay, 29 m. Paratype, SAM–A13621, 1 non-ovig. ♀, 13,0 mm, Agulhas Bank, 22 m. Paratype, SAM–A13622, 1 non-ovig. ♀, 14,0 mm, Saldanha Bay, 5 m. Paratypes, SAM–A13623, 1 ♂, 11,0 mm, 3 non-ovig. ♀, 6,9–12,9 mm, off Still Bay, 20 m.

Other material

SAM–A17790, 6 non-ovig. ♀, off Saldanha Bay, 79 m. SAM–A14029, 1 juv., False Bay, 56 m. SAM–A14030, 1 non-ovig. ♀, False Bay, 29 m. SAM–A14031, 1 non-ovig. ♀, False Bay, 26 m. SAM–A14032, 1 non-ovig. ♀, False Bay, 61 m. SAM–A14033, 1 non-ovig. ♀, False Bay, 42 m. SAM–A14034, 1 ♂, False Bay, 66 m. SAM–A14035, 1 non-ovig. ♀, False Bay, 75 m. SAM–A14036, 1 juv., False Bay, 48 m. SAM–A14037, 1 non-ovig. ♀, Agulhas Bank, 125 m. SAM–A14038, 1 non-ovig. ♀, Agulhas Bank, 97 m. SAM–A14062, 1 non-ovig. ♀, Agulhas Bank, 36 m. SAM–A14039, 5 non-ovig. ♀, off Still Bay, 15 m.

Distribution

Saldanha Bay to Still Bay, 5–125 m.

Remarks

When originally described as the type species of *Agulanthura*, the species was placed in a new genus on the basis of the smooth body profile, the lack of pereonal pits, and the expanded carpi and meri of the posterior pereopods. With rediagnosis of the genera *Haliophasma* and *Malacanthura* this species is now regarded as a specialized fossorial *Malacanthura*. The five-segmented maxilliped with weak endite, the antennular and antennal structure in the female, and the presence of small ventrolateral pits on the posterior pereonites support this placement.

The smooth body profile, the reduced and weakly pigmented eyes, the uropodal exopods closely adpressed to the telson, and the expanded carpi and meri of the posterior pereopods could all be adaptations for a fossorial mode of life. Almost all the specimens recorded above were taken from fairly fine sediments by grab, another indication of the burrowing habit.

In the original description (Kensley 1975*a*: 72), the appendages figured were those of a male. With examination of a female, it would seem that with the change from female to male the mandible undergoes some reduction and loss of function.

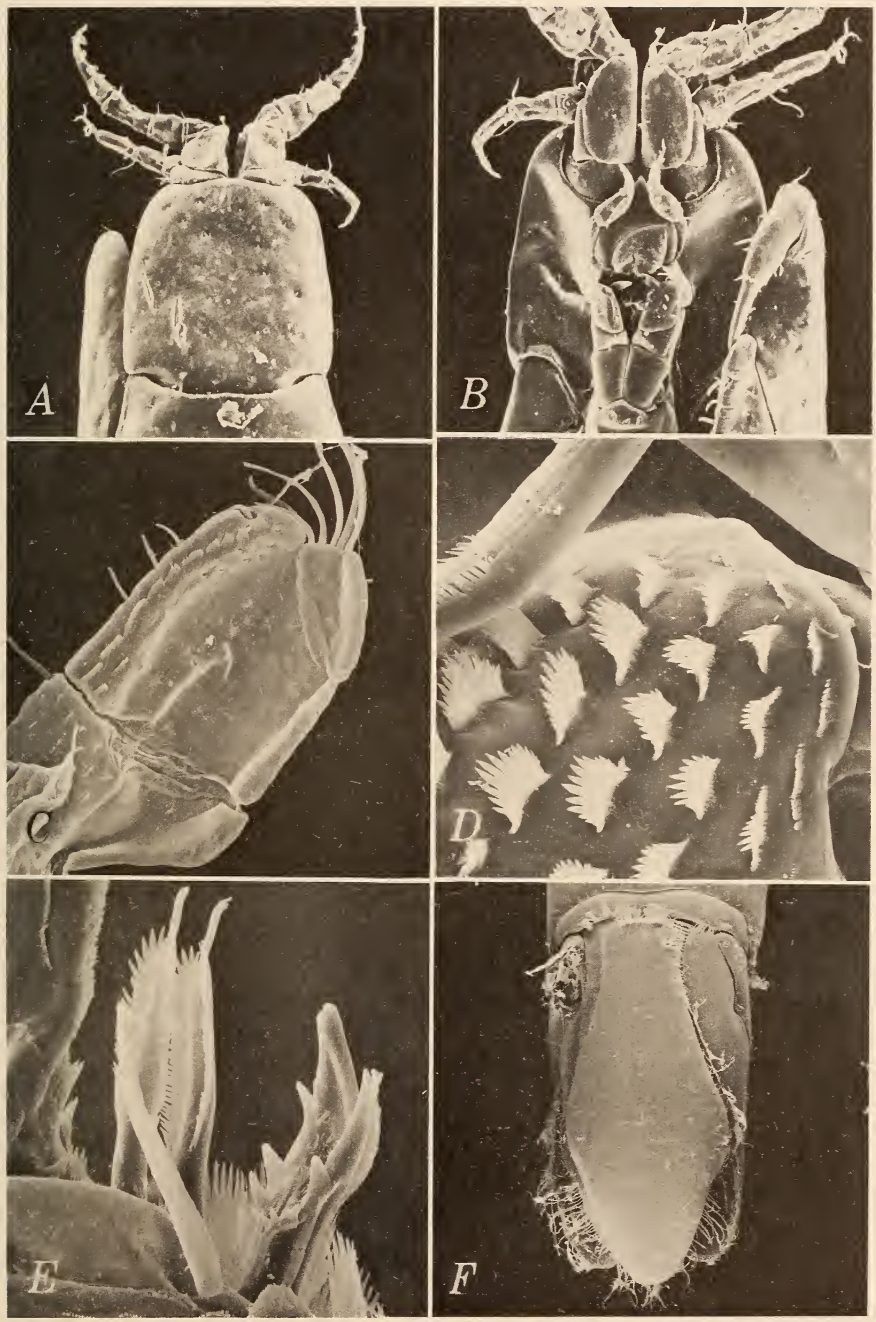

Fig. 33. *Malacanthura serenasinus*. A. ♀ cephalon dorsal view. B. ♀ cephalon ventral view. C. Maxilliped inner view. D. Integumental scales on pereopod 1 propodus. E. Ventrodistal spines on pereopod 2 propodus. F. Telson dorsal view.

Malacanthura transkei sp. nov.
Figs 34–35

Diagnosis

Integument indurate, heavily pitted, Pereopod 1 propodus expanded. Telson narrow, extending beyond uropodal endopod, widest at about midpoint, posterior margin broadly rounded, finely denticulate; strong rounded mid-dorsal longitudinal ridge present.

Description

Female. Integument indurate, heavily pitted dorsally and ventrally. Proportions: $C < 1 < 2 > 3 < 4 = 5 > 6 > 7$. Cephalon with rounded rostrum extending as far as anterolateral lobes; shallow groove present between anterior margin and well-developed eyes. Pereonite 1 with bilobed posterior margin; pereonite 2 with shallow mid-dorsal area ending posteriorly in shallow circular depression; pereonites 3–5 with mid-dorsal elongate pit in shallow depression. Pleonites 1–5 fused, fusion lines indicated by dorsolateral grooves. Pleonite 6 free, posterior margin with short mid-dorsal notch. Telson widest at about midpoint, lateral margins gently convex, posterior margin broadly rounded, denticulate.

Basal antennular segment somewhat shorter than segments 2 and 3 together; flagellum three-articulate, second article more than twice length of first or third; distal article bearing three aesthetascs. Antenna with numerous setae on all segments; peduncle segment two strongly grooved; segment 5 longest; flagellum five-articulate. Mandibular palp three-segmented, terminal segment with seven fringed spines; incisor of three cusps; lamina dentata with four teeth; molar conical. Maxilla with six distal spines. Maxilliped five-segmented, distal segment oval, set obliquely on segment 4, with numerous fine setules; endite absent. Pereopod 1 unguis more than half length of dactylus; propodus expanded proximally, palm gently concave, with five submarginal spines; carpus triangular, distal rounded lobe bearing spine-scales, Pereopod 2 unguis half length of dactylus, with strong auxiliary spine at base; propodus rectangular, with strong sensory spine at posterodistal corner, posterior margin bearing fringed scales; carpus triangular, with strong posterodistal spine. Pleopod 1 exopod operculiform, subequal in length and about three times width of endopod. Uropodal exopod elongate-oval, outer margin dentate, setose, distally acute; endopod broadly oval, margin setose, finely dentate.

Male. Antennule with ten-articulate flagellum. Pereopod 1 propodal palm straight, with dense band of fringed spines on inner surface. Pleopod 2 endopod with slender distally expanded copulatory stylet reaching slightly beyond ramus. Pleon, telson, and uropods relatively more elongate than in female.

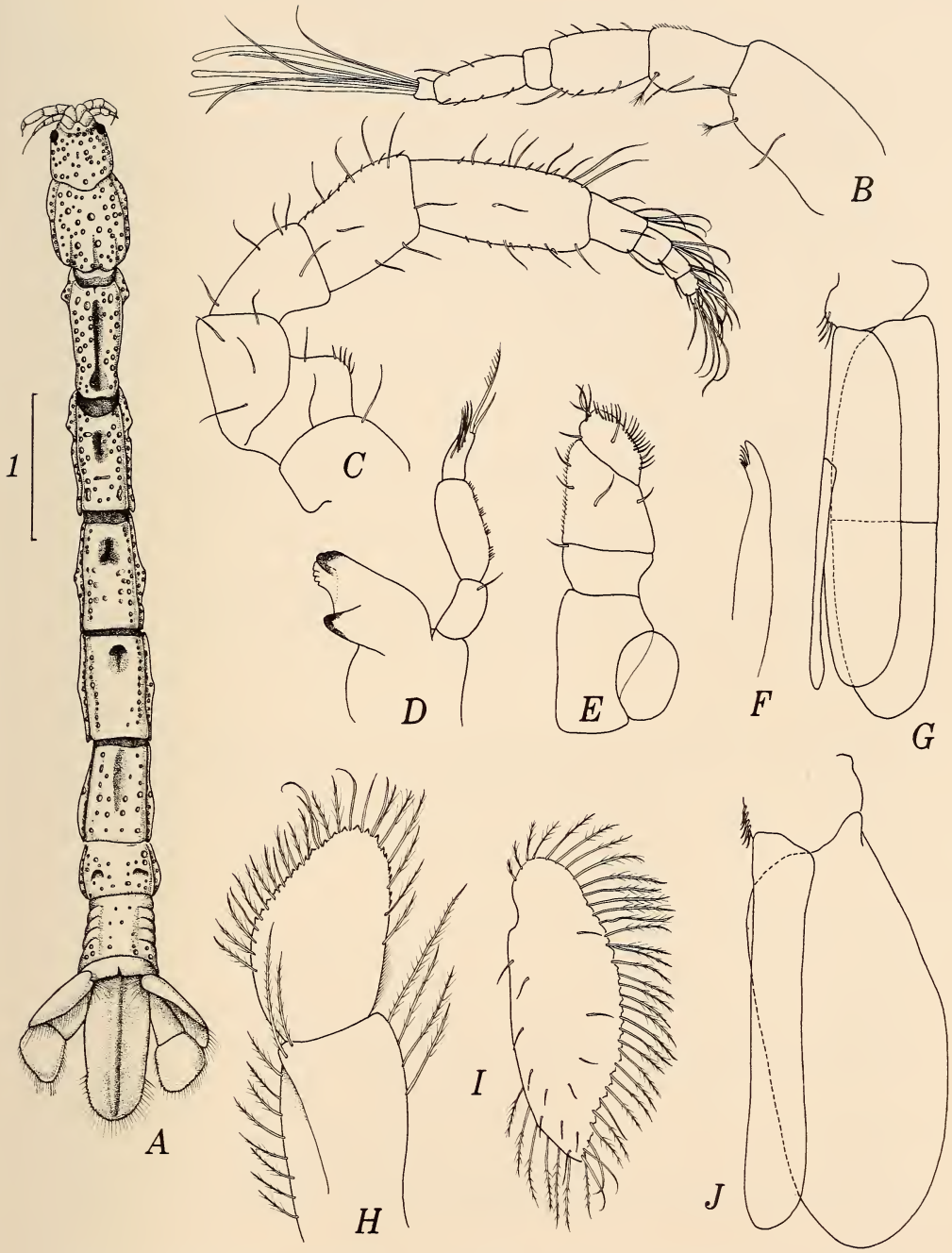

Fig. 34. *Malacanthura transkei*. A. ♀ dorsal view. B. Antennule. C. Antenna. D. Mandible. E. Maxilliped. F. Maxilla. G. Pleopod 2 ♂. H. Uropodal endopod and basis. I. Uropodal exopod. J. Pleopod 1. Scale in mm.

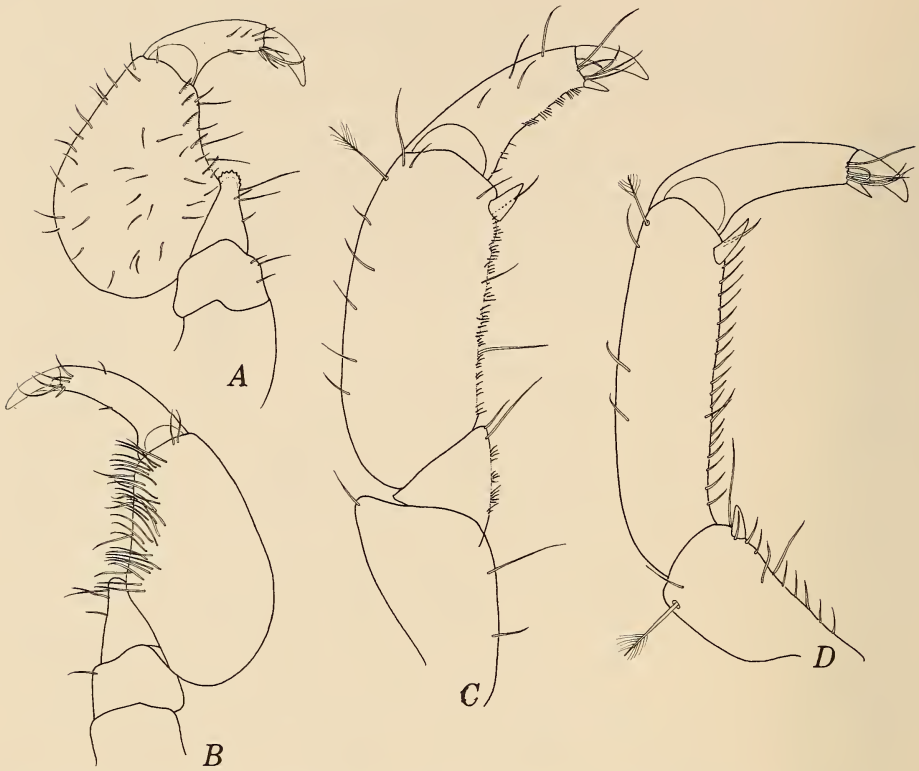

Fig. 35. *Malacanthura transkei*. A. Pereopod 1 ♀. B. Pereopod 1 ♂. C. Pereopod 2. D. Pereopod 7.

Type material

Holotype, SAM–A17531, 1 ♂, 7,5 mm, off Transkei, 710–775 m. Allotype, SAM–A17532, 1 non-ovig. ♀, 7,5 mm, off Transkei, 710–775 m. Paratype, SAM–A17533, 1 non-ovig. ♀, 6,1 mm, off Transkei, 710–775 m. Paratype, USNM 184667, 1 non-ovig. ♀, 6,3 mm, off Transkei, 710–775 m.

Etymology

The specific name derives from the area of the coastline of southern Africa, off which the species was collected.

Remarks

See discussion at end of *M. schotteae* discussion.

Mesanthura Barnard, 1914

Diagnosis

Eyes present. Antennular flagellum of two articles; antennal flagellum of three articles. Mandibular palp three-segmented. Maxilliped five-segmented, endite rudimentary or absent. Pereopod 1 expanded, subchelate, sometimes highly modified in male. Pereopods 2–3 ambulatory; pereopods 4–7 with triangular carpus underriding propodus. Pleopod 1 exopod operculiform. Pleonites 1–5 fused, 6 free. Telson with two basal statocysts. Dorsal integument with chromatophores in species-specific pattern.

Type species

Anthura catenula Stimpson, 1855.

KEY TO THE SOUTH AFRICAN SPECIES OF *MESANTHURA*

1. Dorsal pigment in solid triangle on cephalon, posterior bars on pereonites 4–7 .. *dimorpha*
– Dorsal pigment in open rings or rectangles on cephalon and all pereonites ..... *catenula*

Mesanthura catenula (Stimpson, 1855)

Figs 36–37

Anthura catenula Stimpson, 1855: 393. Beddard, 1886: 143. Stebbing, 1910: 420.
Mesanthura catenula: Barnard, 1914: 343a, pl. 29A; 1925*a*: 143, fig. 9a; 1940: 490; 1955: 5. Nierstrasz, 1941: 242. Day, Field & Penrith, 1970: 47. Kensley, 1978*a*: 52, fig. 23B–C; 1978*b*: 1.

Diagnosis

Pigment pattern: hollow rectangular patches on cephalon and pereonites 1–7; broad transverse band on pleon; dense oval patches on uropodal exopod, endopod, and telson. Pereopod 1 propodus expanded, palm sinuous, with hyaline margin. Uropodal exopod with distinct distal notch.

Type material

Stimpson's type from Simon's Bay in False Bay was apparently lost, perhaps in the Chicago fire of 1871.

Other material

SAM–A2719, 1 juv., Mouille Point, Table Bay, intertidal. SAM–8825, 1 non-ovig. ♀, 3 juvs, St. James, False Bay. SAM–A250, 2 non-ovig. ♀, 10,5–11,8 mm, Kalk Bay in False Bay, intertidal. SAM–A2106, 1 non-ovig. ♀, St. James, False Bay. SAM–A3302, 1 juv., 8,0 mm, Buffels Bay in False Bay. SAM–A14350, 1 ovig. ♀, 14,0 mm, False Bay, 4 m. SAM–A4171, 1 ovig. ♀, 18,4 mm, East London, intertidal. SAM–A14352, 2 non-ovig. ♀, 14,5 mm, locality unknown.

Distribution

Table Bay to East London, intertidal to 4 m.

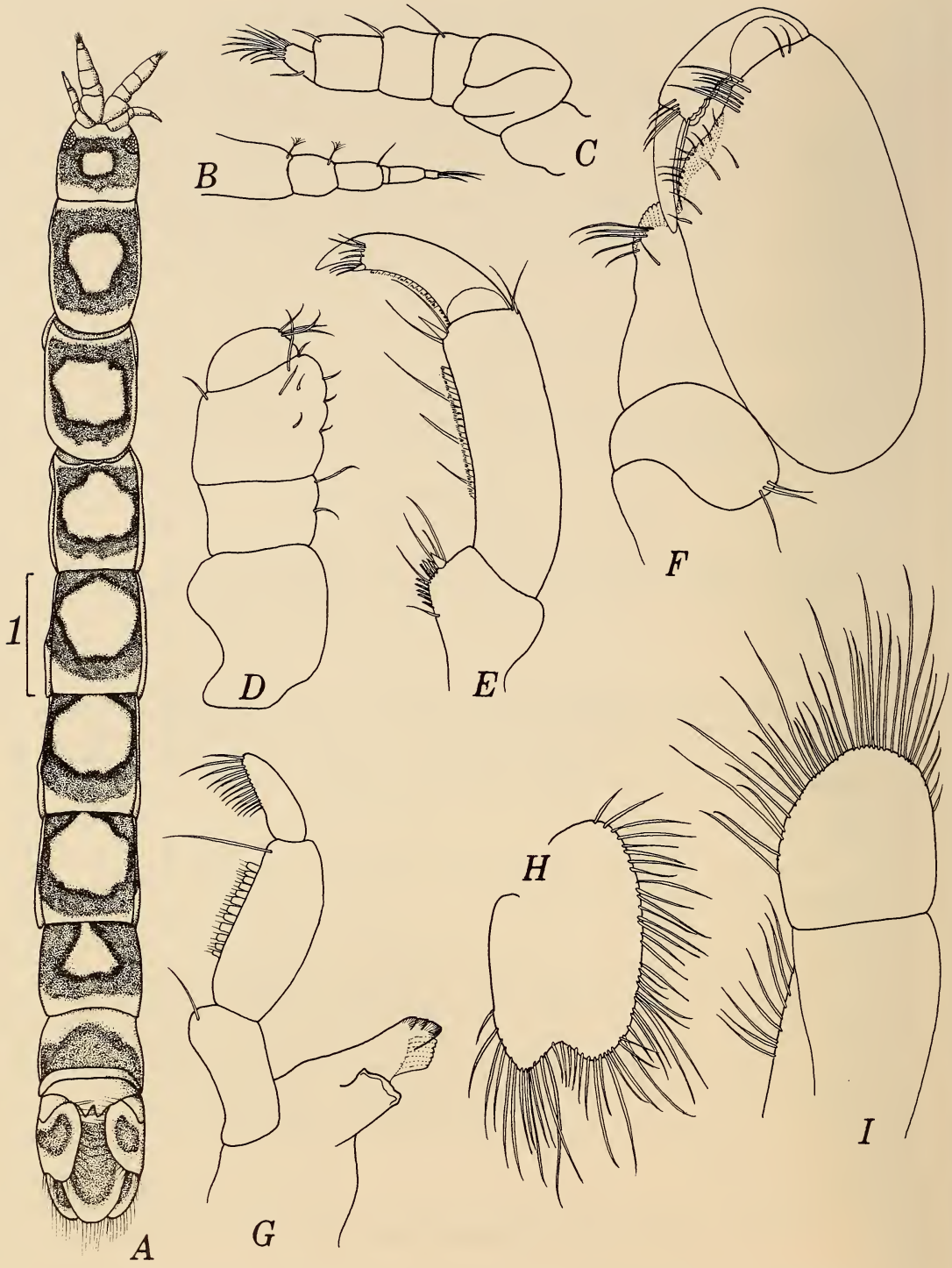

Fig. 36. *Mesanthura catenula*. A. ♀ dorsal view. B. Antennule. C. Antenna. D. Maxilliped. E. Pereopod 7. F. Pereopod 1. G. Mandible. H. Uropodal exopod. I. Uropodal basis and endopod. Scale in mm.

Fig. 37. *Mesanthura catenula*. A. Spine cluster at dactylar-propodal articulation of pereopod 1. B. Pereopod 2 propodal scales.

Remarks

In some of the specimens listed above, which were collected in the early part of this century, the colour pattern has faded, but in material collected since 1932 the pigment persists. Some variation in the pattern has been noted e.g., occasionally there is a simple broad bar across the cephalon posterior to the eyes, while pereonite 1 sometimes has a solid patch of pigment. In spite of these variations the overall pattern makes the species unmistakable, and it may easily be separated from *M. dimorpha* by the structure of pereopod 1 in the male and female.

Mesanthura dimorpha sp. nov.
Figs 38–39

Diagnosis

Pigment pattern: triangle on cephalon; ring on pereonites 1–3; posterior bar on pereonites 4–7; bar on pleonite 6; oval on telson. Cephalon in male with midventral lamellar process. Pereopod 1 in female, propodal palm with low tooth at midpoint, carpus distally acute; pereopod 1 in male, propodal palm concave, carpus distally strongly produced into bilobed process.

Description

Female. Integument moderately indurate. Body proportions: $C < 1 = 2 = 3 < 4 = 5 > 6 > 7$. Cephalon with low rostral point; eyes dorsolateral. Fused pleonites 1–5 subequal in length to pereonite 7; pleonite 6 free, with tiny mid-dorsal notch in posterior margin. Telson posteriorly evenly

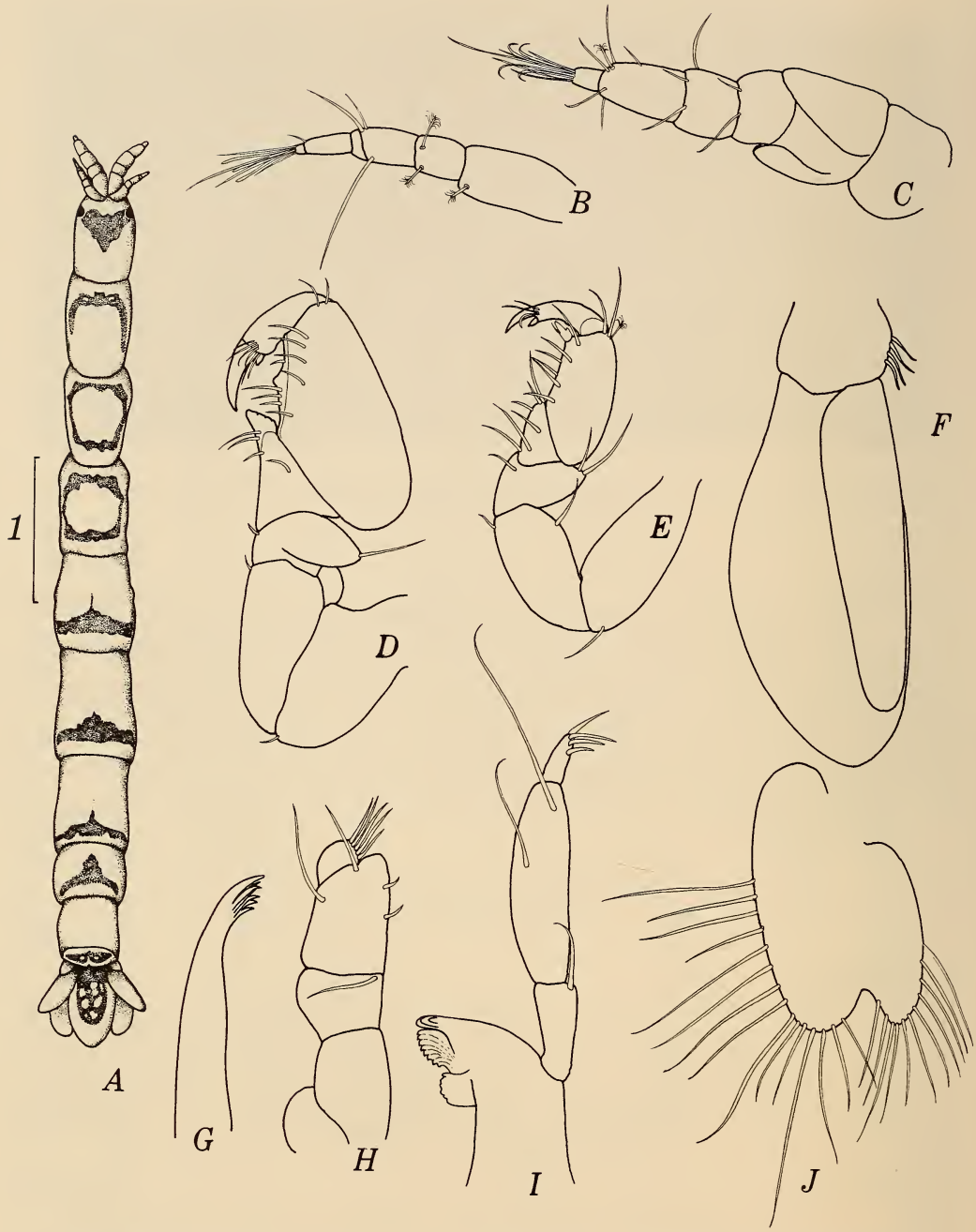

Fig. 38. *Mesanthura dimorpha*. A. ♀ dorsal view. B. Antennule. C. Antenna. D. Pereopod 1 ♀. E. Pereopod 2 ♀. F. Pleopod 1. G. Maxilla. H. Maxilliped. I. Mandible. J. Uropodal exopod. Scale in mm.

rounded, central pigmented part dorsally gently convex. Antennule with basal peduncular segment equal in length to, but broader than two distal segments; flagellum of two articles. Antennal peduncle with second segment grooved to accommodate antennule; flagellum of one article. Mandibular palp three-segmented, segment 2 twice length of basal segment, with two simple distal setae; terminal segment with four distal spines; incisor of three cusps; lamina dentata of eight serrations. Maxilla with seven distal spines. Maxilliped five-segmented, lacking endite; subterminal segment with two short setae on median margin; terminal segment with five setae on median margin. Pereopod 1 subchelate, expanded; unguis about one-third length of dactylus; propodal palm with blunt tooth at midpoint; carpus triangular, with corneous triangular extension distally. Pereopods 2–3 ambulatory, with strong sensory spine at posterodistal corner of propodus. Pereopods 4–7 with short roughly triangular carpus. Pleopod 1 exopod operculiform; endopod less than half width and shorter than exopod; basis with four retinaculae. Uropodal exopod with deep notch in distal margin; endopod not reaching telsonic apex.

Male. Antennule with multiarticulate flagellum bearing filiform aesthetascs. Midventral keel of cephalon expanded into slightly hollowed platelike process. Pereopod 1 strongly indurate; unguis almost half length of dactylus; propodus with concave palm bearing distal keeled tooth; inner surface with single row of spines and strong proximal tooth; carpus triangular, distally produced well beyond propodal base into narrowly rounded bilobed process. Pereopods 2–3 with dactylus meeting distal extension of triangular carpus. Pleopod 2 endopod with simple rod-like copulatory stylet not reaching apex of ramus.

Colour pattern

Similar in male and female. Cephalon with triangular patch of pigment with base between eyes. Pereonite 1 with narrow hoop of pigment in anterior half. Pereonites 2–3 with hollow rectangle of pigment. Pereonites 4–7 with transverse band of pigment near posterior margin. Pleonite 6 with transverse band. Telson with oval reticulation of pigment.

Type material

Holotype, SAM–A17534, ♂, 6,3 mm. Allotype, non-ovig. ♀, 5,9 mm. Paratypes, 2 non-ovig. ♀, 4,8–5,4 mm, 2 juvs, off East London, 90 m. Paratype, SAM–A14347, ♂, 9,0 mm, off Natal. Paratype, SAM–A14354, ♂, 7,5 mm, off Port Elizabeth, 84 m. Paratypes, USNM 184666, ♂, 6,0 mm, 1 non-ovig. ♀, 5,0 mm, off East London, 90 m.

Distribution

Natal to Port Elizabeth, 84–90 m.

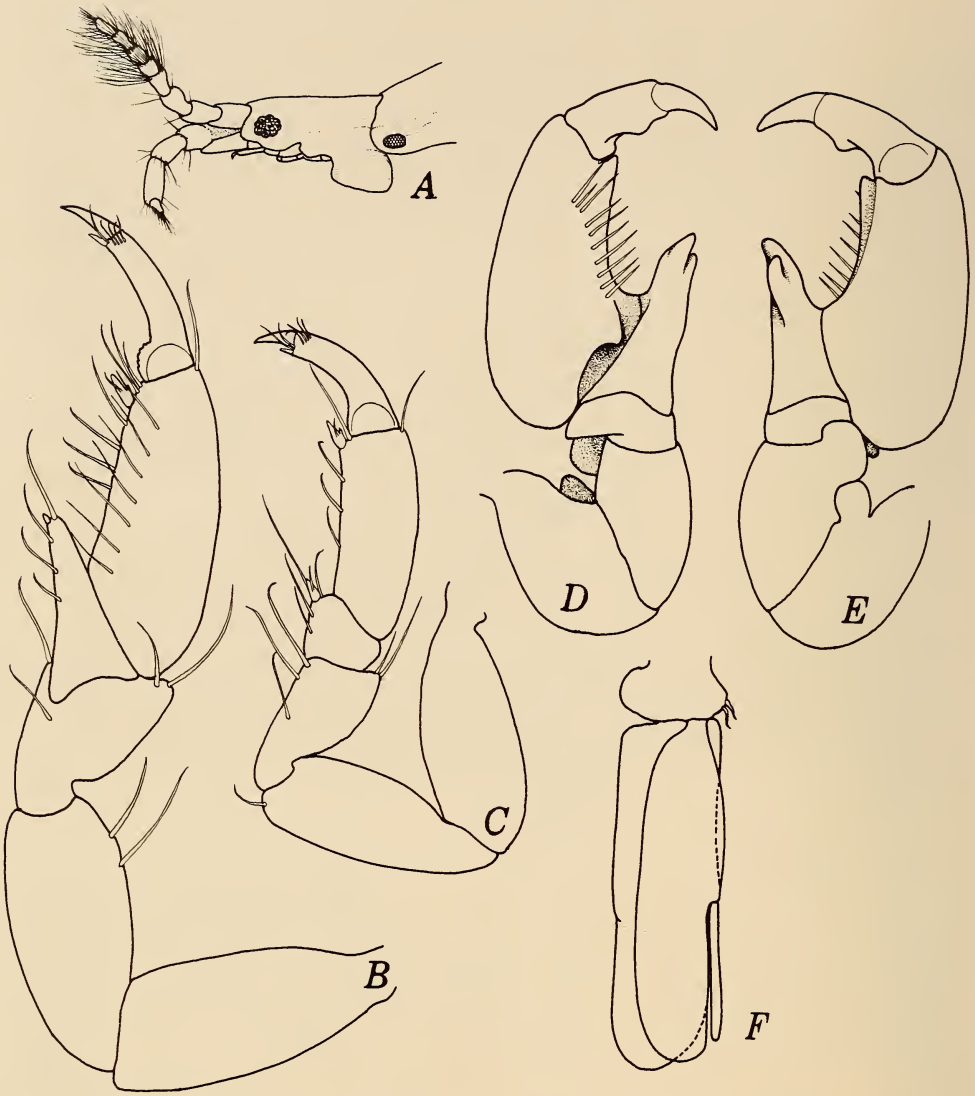

Fig. 39. *Mesanthura dimorpha*. A. Cephalon ♂ lateral view. B. Pereopod 2 ♂. C. Pereopod 7 ♂. D. Pereopod 1 ♂ inner surface. E. Pereopod 1 ♂ outer surface. F. Pleopod 2 ♂.

Etymology

The specific name derives from the dimorphic nature of the first pereonite and first pereopods.

Remarks

Of the described species of *Mesanthura*, the present species resembles only *M. ocellata* Barnard, 1925*a*, from Thailand, especially in having rings of pigment on the anterior pereonites. Barnard's species, however, also has rings on the posterior pereonites. Examination of Barnard's type material reveals further differences. The proportions of the mandibular palp segments, the pereopods 1 of the female, and the uropods all show differences from the present species.

Neohyssura Amar, 1952

Diagnosis

Eyes present or absent. Antennular flagellum of three to five articles; antennal flagellum of seven articles. Mandibular palp three-segmented. Maxilliped seven-segmented; endite present. Pereopods 1–3 similar, subchelate; pereopods 4–7 with triangular carpus underriding propodus. Pleonites 1–5 free, 6 fused with telson. Pleopod 1 non-operculiform. Telson indurate, spiniform.

Type species

Hyssura spinicauda Walker, 1901.

Neohyssura skolops Kensley, 1978
Figs 40–41

Neohyssura skolops Kensley, 1978*b*: 9, figs 5–6.

Diagnosis

Telson terete, spike-like. Uropodal exopod dentate on mesial margin. Maxilliped with thin-walled endite. Eyes present.

Type material

Holotype, SAM–A15651, 1 non-ovig. ♀, 5,8 mm, off Natal, 850 m.

Other material

SAM–A17535, 2 juvs, 3,1 mm, off East London, 90 m.

Distribution

East London to Natal, 90–850 m.

Panathura Barnard, 1925*a*

Diagnosis

Eyes present. Antennular flagellum of two to five articles; antennal flagellum of two to three articles. Mandible with three-segmented palp.

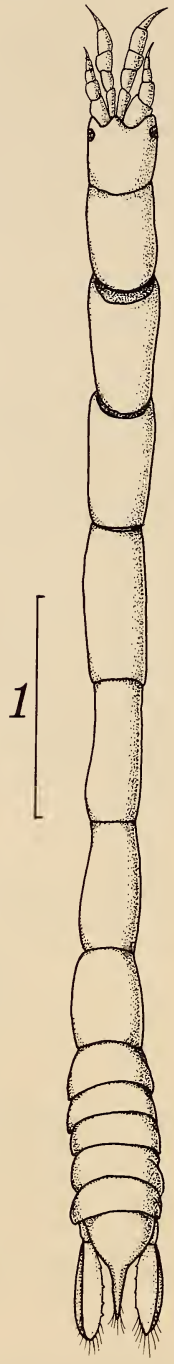

Fig. 40. *Neohyssura skolops*.
♀ dorsal view. Scale in mm.

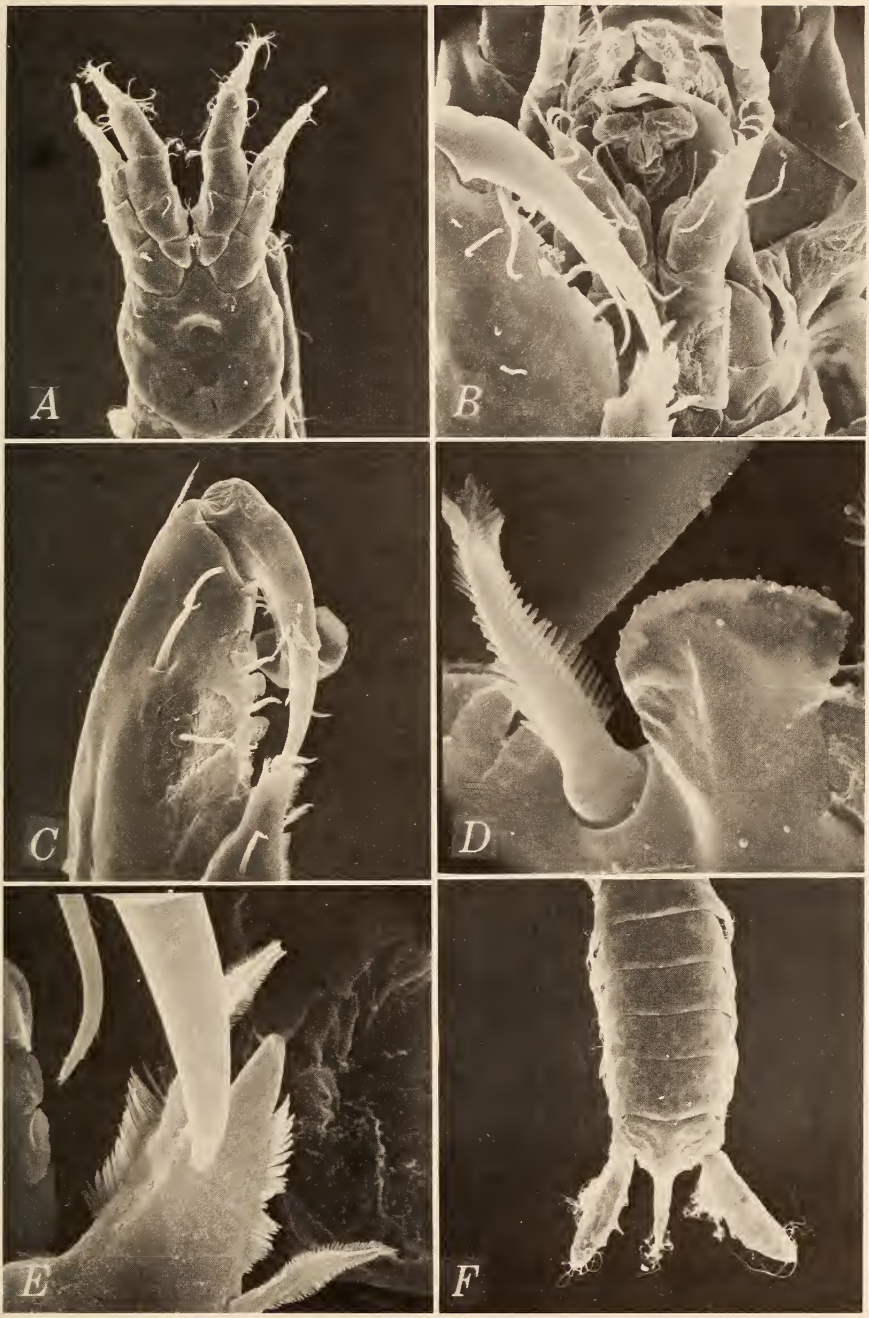

Fig. 41. *Neohyssura skolops*. A. ♀ cephalon dorsal view. B. Mouthparts and pereopod 1 palm. C. Pereopod 1 propodus and dactylus. D. Pereopod 1 propodal palm spine and lobe. E. Pereopod 1 apex of carpus. F. Pleon and telson.

Maxilliped six- (seven) segmented; endite well developed, distally rounded or acute. Pereopods 1–3 subchelate, subsimilar. Pereopods 4–7 with triangular carpus underriding propodus. Pleopod 1 exopod operculiform. Pleonites 1–6 free, short. Telson lacking statocysts.

Type species

Apanthura serricauda Barnard, 1920.

KEY TO THE SOUTH AFRICAN SPECIES OF *PANATHURA*

1. Pereopod 1 propodal palm with strong triangular proximal tooth; telson distally narrowly rounded ..... *amstelodami*
– Pereopod 1 propodal palm with several low rounded teeth; telson distally broadly and evenly rounded ..... *serricauda*

Panathura amstelodami Kensley, 1976

Fig. 42

Panathura amstelodami Kensley, 1976: 277, figs 4–5; 1977: 239; 1978*a*: 54, fig. 23D; 1980: 32.
Expanathura amstelodami: Wägele, 1981: 121.

Diagnosis

Telson and uropods not indurate; telson posteriorly tapering to broadly rounded apex, margins finely serrate. Maxillipedal endite distally narrowed. Lamina dentata of mandible with finely denticulate part; molar reduced. Pereopod 1 propodal palm with single strong proximal tooth, followed by two smaller teeth.

Type material

Holotype, Muséum National d'Histoire Naturelle, Paris, IS.1002, 1 ♂, 5,0 mm, Amsterdam Island. Paratypes, M.N.H.N., Paris, IS.1003, 2 non-ovig. ♀, 3,2–3,8 mm, Amsterdam Island, upper infralittoral to 80 m. Paratypes, SAM–A14994, 2 ♂, 3,0–3,2 mm, 1 non-ovig. ♀, 4,4 mm, Amsterdam Island.

Other material

SAM–A14356, 1 ovig. ♀, 4,9 mm, off Natal. SAM–A17536, 1 ♂, 3,1 mm. 1 ovig. ♀, 2,9 mm, 1 non-ovig. ♀, 3,0 mm, Walter's Shoal, 33°13′S 45°51′E, 38–46 m. USNM 171731, 11 ♂, 6 ovig. ♀, 31 non-ovig. ♀, south of Beira, Mozambique, 62 m. USNM 171732, 1 ovig. ♀, 4 non-ovig ♀, 1 juv., south coast of Madagascar, 46 m. USNM 171733, 1 ♂, 3 ovig. ♀, 8 non-ovig. ♀, 6 juvs, south coast of Madagascar, 38 m.

Distribution

St. Paul and Amsterdam Islands, southern Indian Ocean; Walter's Shoal, south-western Indian Ocean; Natal to Mozambique and Madagascar, upper infratidal to 80 m.

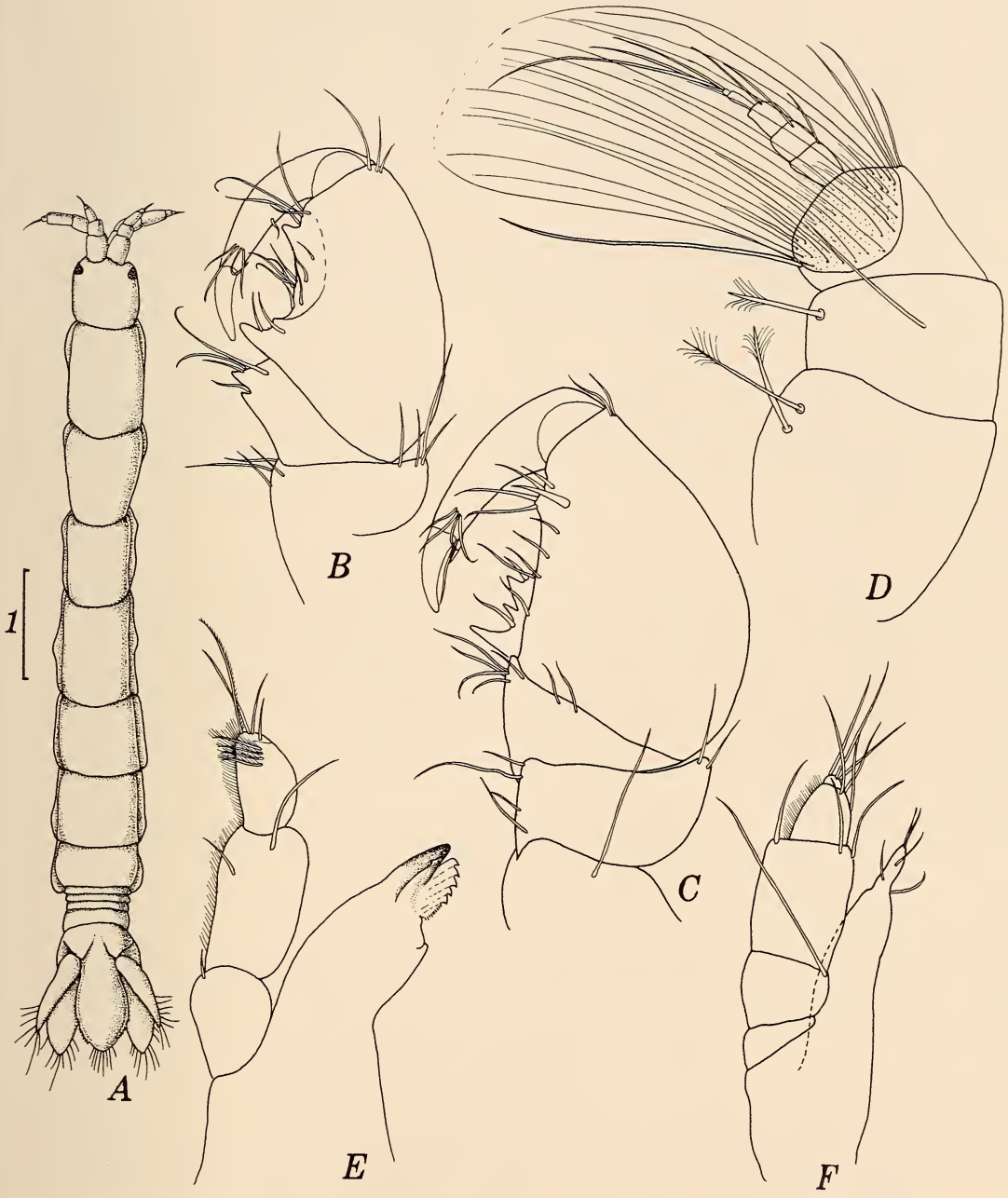

Fig. 42. *Panathura amstelodami*. A. ♀ dorsal view. B. Pereopod 1. C. Pereopod 2. D. Antennule ♂. E. Mandible. F. Maxilliped. Scale in mm.

Panathura serricauda (Barnard, 1920)

Figs 43–44

Apanthura serricauda Barnard, 1920: 339, pl. 15 (figs 11–12).
Panathura serricauda: Barnard, 1925*a*: 143; 1940: 490; 1955: 5. Nierstrasz, 1941: 241. Penrith & Kensley, 1970: 228, Day, Field & Penrith, 1970: 47. Kensley, 1976: 264, fig. 6; 1978*a*: 54, fig. 23E–G. Wägele, 1981: 118.
Panathura serricaudata (*sic*): Day, 1969: 78.

Diagnosis

Uropods and telson indurate. Telson distally evenly rounded, margins serrate. Maxillipedal endite distally obtuse. Pereopod 1 propodal palm bearing several blunt, almost rectangular teeth.

Type material

Syntypes, SAM–A2620, 1 non-ovig. ♀, damaged, Mouille Point, Table Bay, intertidal. Syntypes, SAM–A2698, 2 non-ovig. ♀, Mouille Point, Table Bay, intertidal. Syntypes, SAM–A2692, 1 non-ovig. ♀, St. James, False Bay, intertidal.

Other material

SAM–A12741, 2 ovig. ♀, 4,5 mm, 1 non-ovig. ♀, 4,5 mm, 1 juv., Lüderitz, intertidal. SAM–A14355, 1 ovig. ♀, 5,0 mm, 1 non-ovig. ♀, 3,9 mm, Langebaan Lagoon. SAM–A14359, 3 ovig. ♀, 4,0–5,0 mm, 3 juvs, 15 non-ovig. ♀, Schaapen Island, Langebaan. SAM–A14358, 2 non-ovig. ♀, False Bay, 42 m. SAM–A14357, 1 non-ovig. ♀, Agulhas Bank, 49 m. SAM–A17550, 7 ovig. ♀, 3,0–4,0 mm, 9 non-ovig. ♀, 2,5–3,2 mm, south of East London, 90 m. SAM–A15511, 2 non-ovig. ♀, St. Paul Island.

Distribution

Lüderitz to East London, intertidal to 90 m; St. Paul Island, southern Indian Ocean.

Remarks

Panathura serricauda is most frequently collected from the holdfasts of the kelp *Ecklonia maxima*.

Quantanthura Menzies & George, 1972

Diagnosis

Eyes present or absent. Antennular flagellum of five to seven articles; antennal flagellum of four to nine articles. Mandibular palp three-segmented. Maxilliped six-segmented; endite well developed. Pereopod 1 subchelate, propodus expanded; pereopods 2–3 smaller than pereopod 1; pereopods 4–7 with rectangular carpus. Pleopod 1 exopod operculiform. Pleonites 1–5 fused, pleonite 6 free. Telson with two basal statocysts.

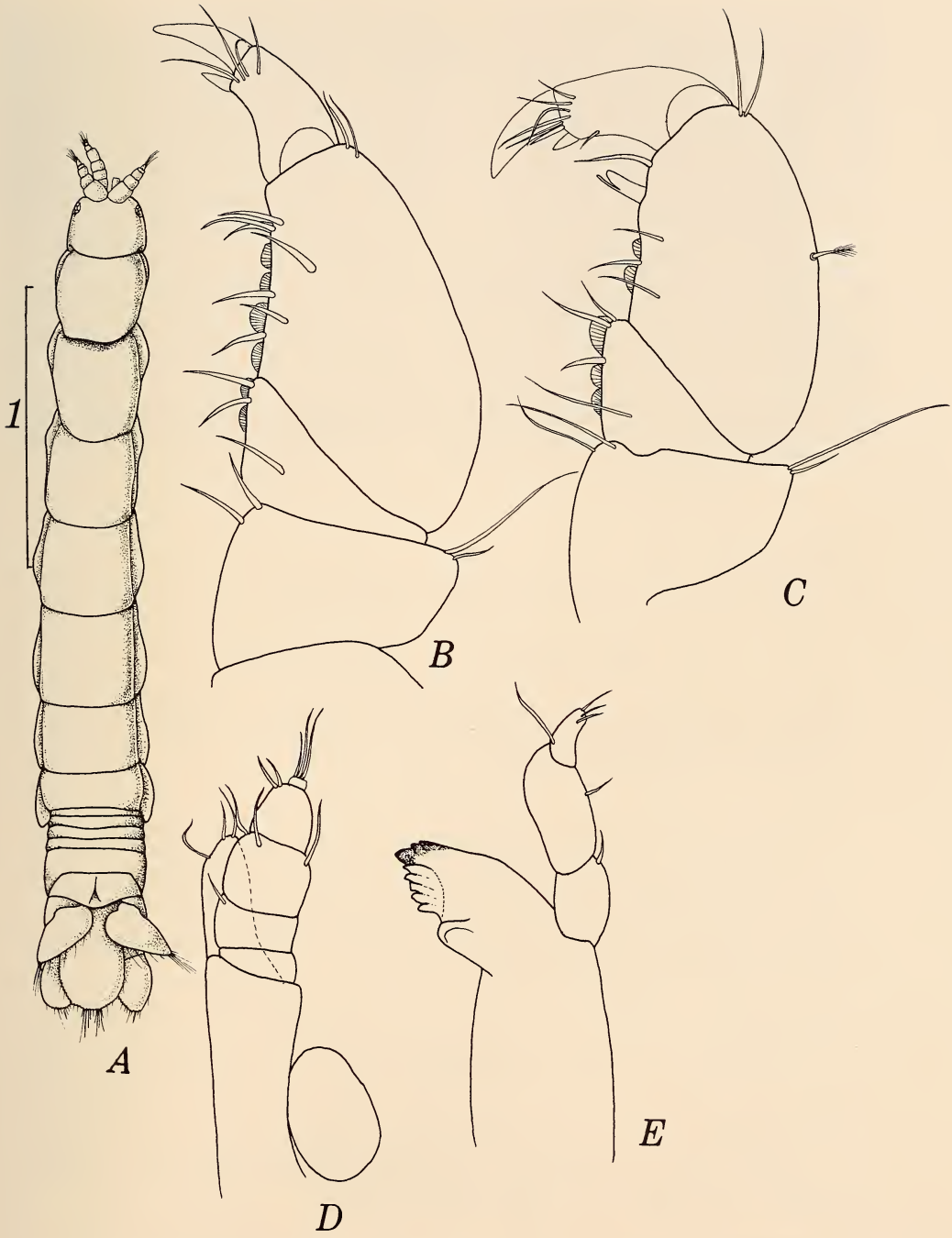

Fig. 43. *Panathura serricauda*. A. ♀ dorsal view. B. Pereopod 1. C. Pereopod 2. D. Maxilliped. E. Mandible. Scale in mm.

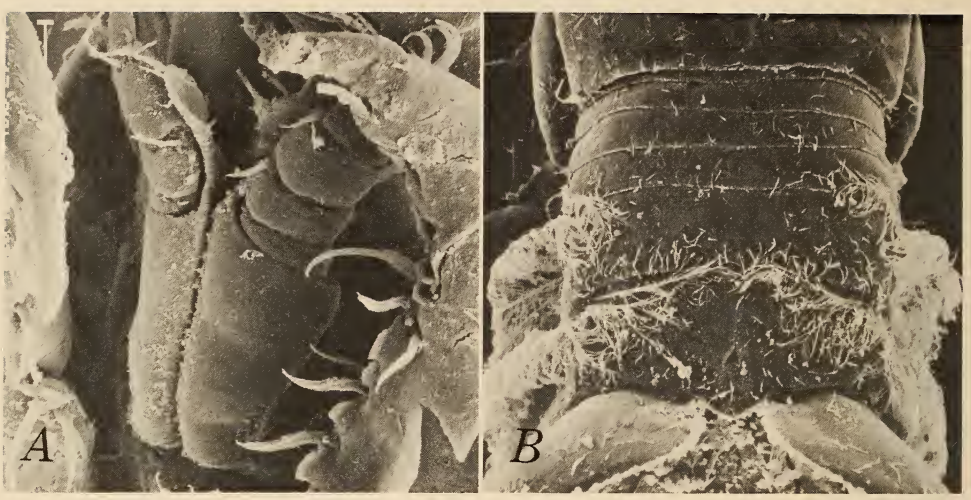

Fig. 44. *Panathura serricauda*. A. Maxilliped. B. Pleon dorsal view.

Type species

Quantanthura globitelson Menzies & George, 1972.

Quantanthura remipes (Barnard, 1914)
Figs 45–46

Anthelura remipes Barnard, 1914: 338a, pl. 28B; 1925*a*: 135; 1940: 490. Nierstrasz, 1941: 240. Kensley, 1977: 239; 1978*a*: 46, fig. 20F.
Non Anthelura remipes Kensley, 1978*b*: 1.

Diagnosis

Eyes absent. Antennular flagellum of five articles. Antennal flagellum of four to five articles, reduced. Maxilliped with broad, distally rounded endite. Pereopod 1 propodus expanded, palm convex, with groove on inner surface. Telson elliptical, posteriorly narrowly rounded, dorsally convex. Uropodal exopod ovoid, outer margin sinuous.

Type material

Holotype, SAM–A58, 1 non-ovig. ♀, 28,1 mm, (damaged), off Cape Peninsula, 312 m.

Other material

SAM–A14402, 1 non-ovig. ♀, 10,2 mm, Agulhas Bank, 78 m. SAM–A14993, 1 non-ovig. ♀, 15,9 mm, Lambert's Bay.

Distribution

Lambert's Bay to Agulhas Bank, 78–312 m.

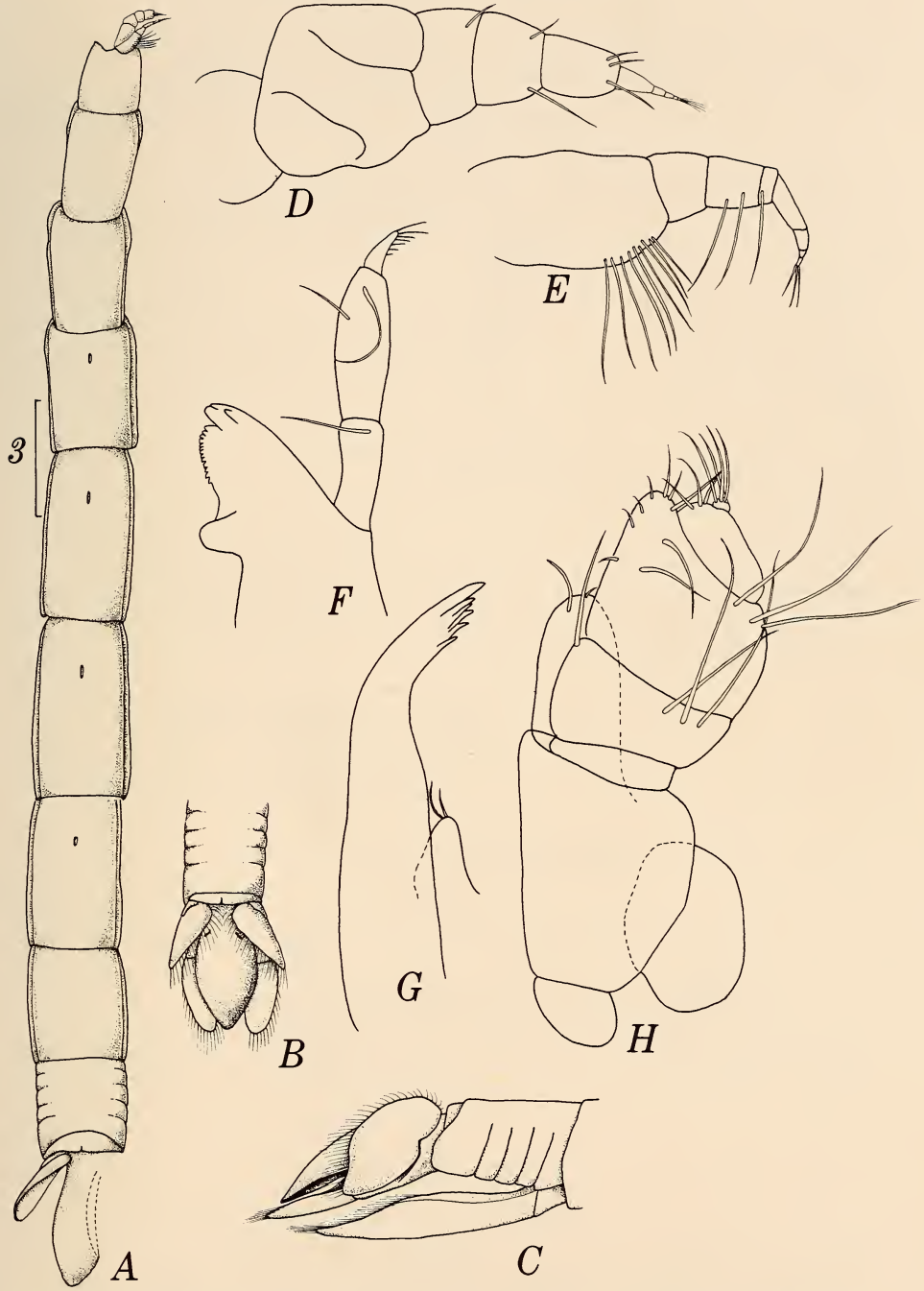

Fig. 45. *Quantanthura remipes*. A. Holotype ♀ dorsal view. B. Pleon ♀ dorsal view. C. Pleon lateral view. D. Antenna. E. Antennule. F. Mandible. G. Maxilla. H. Maxilliped. Scale in mm.

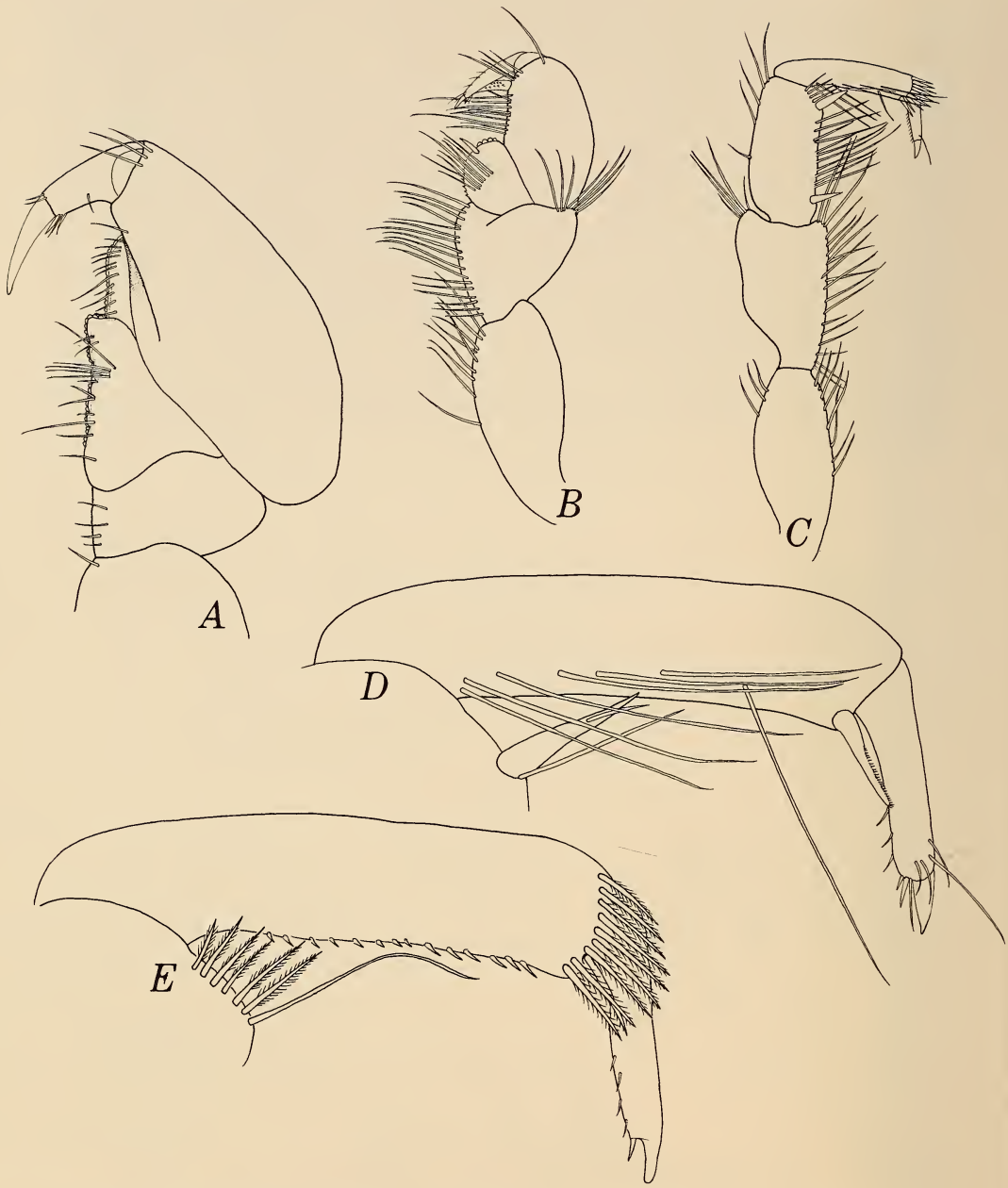

Fig. 46. *Quantanthura remipes*. A. Pereopod 1. B. Pereopod 2. C. Pereopod 7. D. Pereopod 7 dactylus and propodus outer surface. E. Pereopod 7 dactylus and propodus inner view.

Remarks

Since the revision of the diagnosis of *Anthelura* (Kensley 1978*d*: 787) and *Quantanthura* (Kensley and Koening, 1979: 953), there can be little doubt that the present species is a member of the latter genus.

KEY TO SOUTH AFRICAN GENERA OF THE FAMILY PARANTHURIDAE

1. Antennular and antennal flagella of more than 10 articles ..... *Accalathura*
– Antennular and antennal flagella with fewer than 10 articles 2
2. Pereopod 7 absent ..... *Colanthura*
– Pereopod 7 present 3
3. Uropodal exopod reduced, endopod and basis fused ..... *Pseudanthura*
– Uropodal exopod not reduced, endopod free 4
4. Eyes absent; pereopod 7 with triangular carpus ..... *Leptanthura*
– Eyes present; pereopod 7 with rectangular carpus ..... *Paranthura*

Family **Paranthuridae**

Accalathura Barnard, 1925*a*

Diagnosis

Eyes present. Flagella of antennule and antenna multiarticulate. Mandibular palp three-segmented. Maxillipedal endite reaching almost to end of palp; latter of two segments. Pereopod 1 subchelate, propodus expanded; pereopods 2–3 ambulatory; pereopods 4–7 with rectangular carpus. Telson with or without statocyst.

Type species

Calathura crenulata Richardson, 1905.

Accalathura indica (Nierstrasz, 1941)

Fig. 47

Metanthura indica Nierstrasz, 1941: 247, figs 15–24.
Accalathura indica: Kensley, 1977: 250, fig. 8; 1978*a*: 44, fig. 20A. Poore, 1980: 59.

Diagnosis

Antennular and antennal flagella of about twenty-eight and thirty-five articles respectively. Eyes well developed. Pleonite 6 longest, bilobed. Telson elongate-lanceolate, with single basal statocyst. Uropodal exopod elongate-oval.

Type material

Whereabouts unknown.

Other material

SAM–A15348, 1 ovig. ♀, off Mozambique, 100 m. SAM–A17577, 1 ovig. ♀, off Natal, 90 m. SAM–A17578, 1 ♂, off Sodwana Reef, Zululand, 17 m.

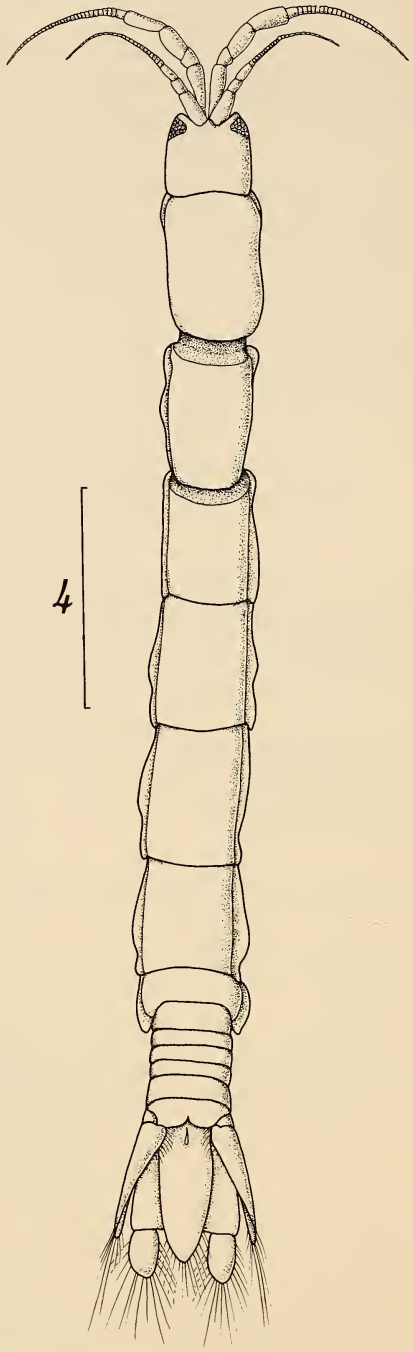

Fig. 47. *Accalathura indica*. ♀ dorsal view. Scale in mm.

Distribution

Natal, Mozambique, to Java Sea, 17–100 m.

Accalathura laevitelson (Kensley, 1975)

Fig. 48

Katanthura laevitelson Kensley, 1975*a*: 69, fig. 17; 1978*a*: 50, fig. 22H–I.
Zulanthura laevitelson: Poore, 1980: 65.

Diagnosis

Eyes present. Pleonites 1–6 free. Maxilliped with strong endite, palp two-segmented. Pereopods 2–3 smaller than pereopod 1; pereopods 4–6 with rectangular carpus not underriding propodus. Single telsonic statocyst present.

Type material

Holotype, SAM–A13552, 1 manca, 6,4 mm, off Still Bay, 30 m.

Distribution

Off Still Bay, 30 m.

Remarks

G. Poore (1981 pers. comm.) has examined this specimen, and is convinced that it is a manca of an *Accalathura* species, almost certainly not *A. indica*. Because the single specimen is immature, a key to the two species of southern African *Accalathura* is not included.

Colanthura Richardson, 1902

Diagnosis

Eyes present or absent. Mandibular palp absent. Antennular and antennal flagella with few short articles. Maxilliped lacking endite or palp segments. Pereopod 1 subchelate, propodus expanded; pereopods 4–6 with rectangular carpi. Pereonite 7 very short, lacking pereopod. Pleonites 1–6 short, free. Pleopod 1 exopod operculiform. Telson lacking statocyst.

Type species

Colanthura tenuis Richardson, 1902.

Colanthura uncinata Kensley, 1978

Figs 49–50

Colanthura uncinata Kensley, 1978*b*: 12, figs 7–8.

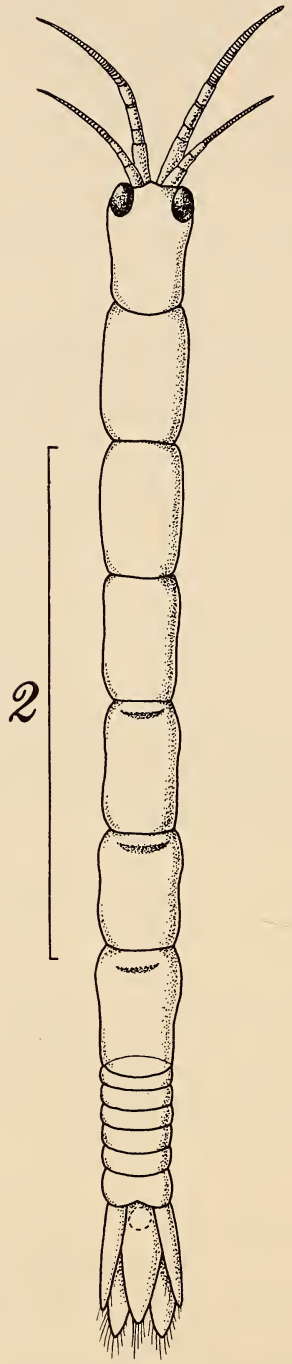

Fig. 48. *Accalathura laevitelson*. Holotype dorsal view. Scale in mm.

Diagnosis

Telson posteriorly evenly rounded, with low mid-dorsal rounded ridge. Pleopod 2 of male, apex of copulatory stylet with single recurved hook. Pereopod 1 male with fourteen fringed spines on inner propodal surface; female with six spines. Uropodal exopod narrowly oval, endopod more broadly oval.

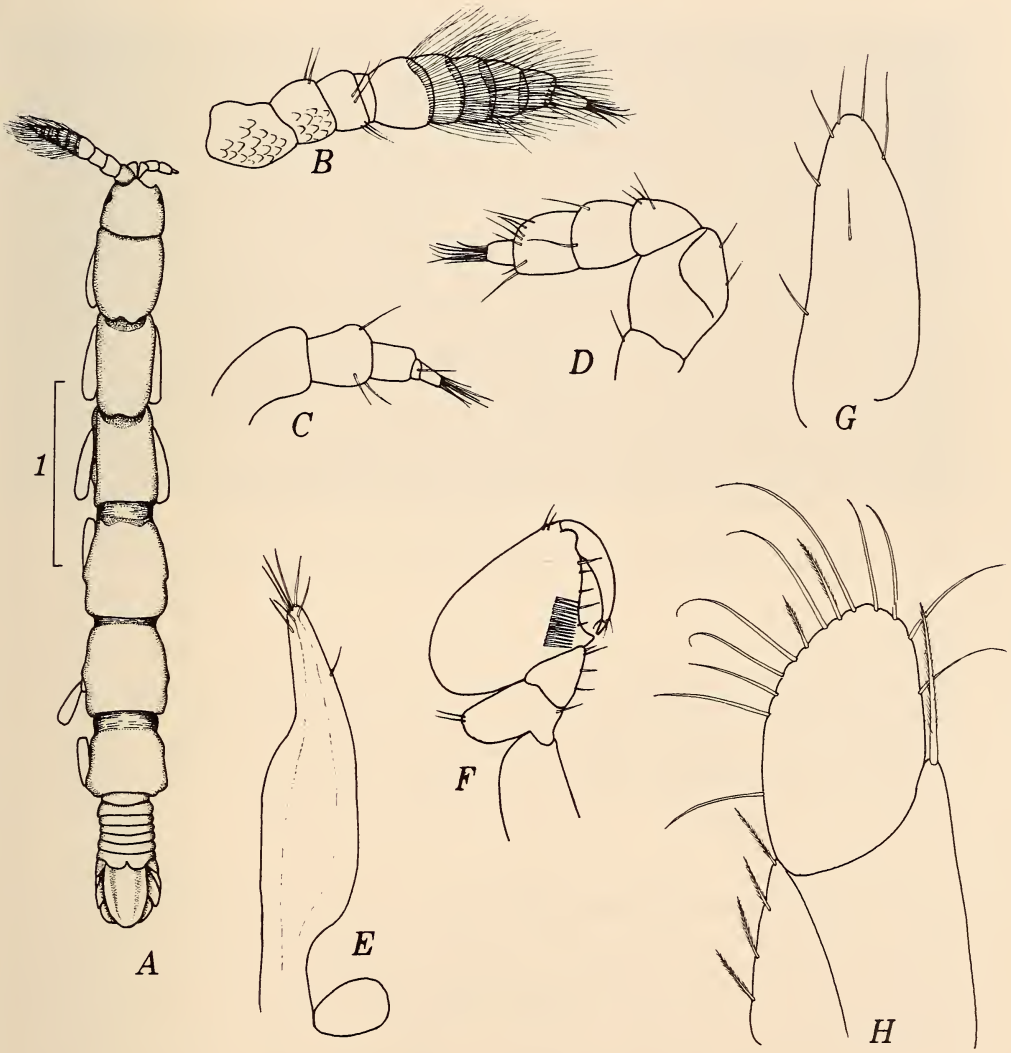

Fig. 49. *Colanthura uncinata*. A. ♂ dorsal view. B. Antennule ♂. C. Antennule ♀. D. Antenna. E. Maxilliped. F. Pereopod 1 ♂. G. Uropodal exopod. H. Uropodal basis and endopod. Scale in mm.

Type material

Holotype, SAM–A15652, 1 ♂, 3,9 mm. Allotype, SAM–A15652, 1 ovig. ♀, 4,5 mm, off Natal, 28°31′S 32°34′E, 680 m. Paratypes, SAM–A15653, 2 ♂, 3,4 mm, 1 ovig. ♀, 4,0 mm, off Natal, 27°59′S 32°40′E, 550 m. Paratypes, USNM 170544, 2 ♂, 3,9 mm, 1 ovig. ♀, 4,5 mm, off Natal, 28°31′S 32°34′E, 680 m.

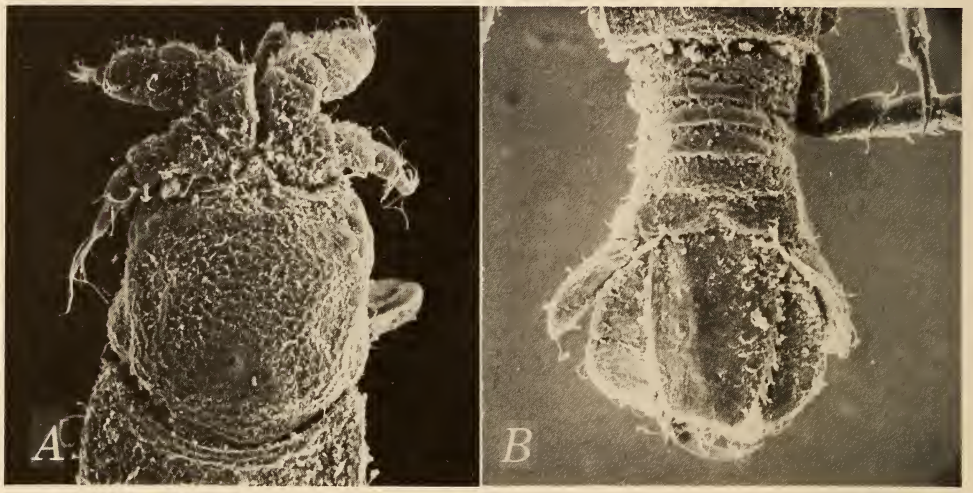

Fig. 50. *Colanthura uncinata*. A. Cephalon dorsal view. B. Pleon dorsal view.

Other material

SAM–A17581, 1 ♂, off Transkei, 32°28′S 28°58′E, 710–775 m. SAM–A17582, 1 ♂, 2 ovig. ♀, off Transkei, 31°59′S 29°22′E, 150–200 m. SAM–A17579, 1 ♂, 2 sub♂, 2 non-ovig. ♀, 4 ovig. ♀, off Natal, 27°59′S 32°40′E, 550 m. SAM–A17580, 6 ♂, 3 sub♂, 5 ovig. ♀, 4 juvs, off Natal, 28°31′S 32°34′E, 680 m.

Distribution

Northern Natal to Transkei, 150–775 m.

Leptanthura Sars, 1899

Diagnosis

Eyes absent. Flagella of antennule and antenna reduced. Mandibular palp three-segmented. Maxillipedal endite rudimentary or absent; palp of one to three articles, with one to two terminal spines only. Pereopod 1 subchelate; pereopods 2–3 similar to but smaller than pereopod 1; pereopods 4–7 with

triangular carpus lacking free anterior margin. Pleonites free. Pleopod 1 exopod operculiform. Uropodal exopod often broadly oval. Telson with single statocyst.

Type species

Anthura tenuis Sars, 1873.

KEY TO THE SOUTH AFRICAN SPECIES OF *LEPTANTHURA*

1. Uropodal exopod margin serrate ..... *urospinosa*
– Uropodal exopod margin entire 2
2. Telson posteriorly broadly rounded 3
– Telson posteriorly tapered, apically acute ..... *agulhasensis*
3. Uropodal exopod with strong notch in distal margin ..... *laevigata*
– Uropodal exopod unnotched 4
4. Uropodal endopod triangular; midventral processes absent from pereon ..... *minuta*
– Uropodal endopod narrow; midventral processes present on some pereonites ... *natalensis*

Leptanthura agulhasensis Kensley, 1975

Fig. 51

Leptanthura agulhasensis Kensley, 1975*a*: 64, figs 14–15; 1978*a*: 52, fig. 22M. Poore, 1978: 141, 144.

Diagnosis

Telson parallel-sided, posterior third tapering to acute apex; dorsal surface with few scattered fringed scales. Uropodal exopod narrow, lanceolate, not reaching endopod. Maxilliped five-segmented, three distal segments tiny.

Type material

Holotype, SAM–A13550, 1 ♂, 9,0 mm, False Bay, 66 m. Allotype, SAM–A13551, 1 non-ovig. ♀, 8,0 mm, off Still Bay, 80 m. Paratypes, SAM–A13617, 2 ♂, 9,0–9,1 mm, False Bay, 66 m. Paratypes, SAM–A13618, 2 non-ovig. ♀, 6,5–7,9 mm, Agulhas Bank, 183 m. SAM–A17583, 2 ovig. ♀, 1 non-ovig. ♀, south of East London, 90 m.

Other material

SAM–A14198, 1 ovig. ♀, off Saldanha Bay, 320 m. SAM–A14328, 1 non-ovig. ♀, off Saldanha Bay. SAM–A14343, 1 ovig. ♀, 1 non-ovig. ♀, False Bay, 75 m. SAM–A14344, 2 non-ovig. ♀, False Bay, 26 m. SAM–A14346, 3 non-ovig. ♀, False Bay, 39 m. SAM–A14345, 1 non-ovig. ♀, Agulhas Bank, 50 m. SAM–A14199, 1 non-ovig. ♀, Still Bay, 183 m. SAM–A17584, 1 ovig. ♀, Still Bay, 80 m. SAM–A14933, 1 ♂, 1 ovig. ♀, locality unknown.

Distribution

Saldanha Bay to East London, 26–320 m.

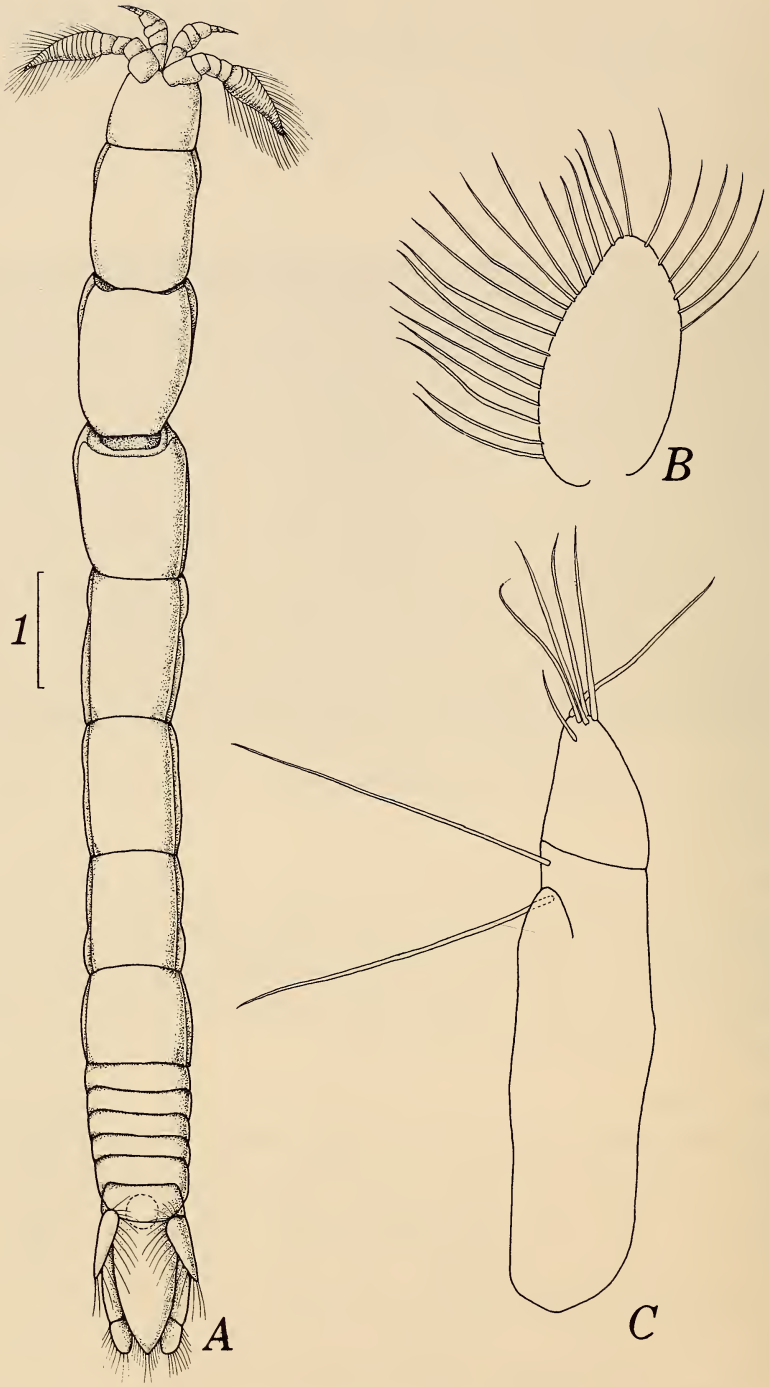

Fig. 51. *Leptanthura agulhasensis*. A. ♂ dorsal view. B. Uropodal exopod. C. Maxilliped. Scale in mm.

Leptanthura laevigata (Stimpson, 1855)

Figs 52–53

Anthura laevigata Stimpson, 1855: 393.
Leptanthura faurei Barnard, 1914: 345a, pl. 29B.
Leptanthura laevigata: Vanhöffen, 1914: 492, fig. 30. Barnard, 1925*a*: 151. Kensley, 1975*a*: 38; 1978*a*: 52, fig. 22N; 1980: 2. Poore, 1978: 138; 1980: 62.

Diagnosis

Telson posteriorly evenly rounded; dorsal surface covered with numerous regular imbricate scales. Uropodal exopod almost circular, with strong notch in distal margin.

Type material

Whereabouts unknown, Type locality: Simon's Bay in False Bay, '12 fathoms'.

Other material

SAM–A14208, 1 ♂, 1 non-ovig. ♀, off Orange River mouth, 170 m. SAM–A14298, 1 non-ovig. ♀, off Orange River mouth. SAM–A14234, 1 non-ovig. ♀, Saldanha Bay. SAM–A14273, 1 ♂, Saldanha Bay, 88 m. SAM–A14284, 1 non-ovig. ♀, Saldanha Bay. SAM–A14329, 3 juvs, off Saldanha Bay. SAM–A14331, 2 ♂, Saldanha Bay. SAM–A14333, 1 non-ovig. ♀, 2 juvs, Saldanha Bay. SAM–A14335, 1 ♂, 5 juvs, Saldanha Bay. SAM–A14336, 1 non-ovig. ♀, 2 juvs, Saldanha Bay. SAM–A14337, 1 sub♂, 2 juvs, Saldanha Bay. SAM–A14231, 1 ovig. ♀, 1 non-ovig. ♀, Langebaan. SAM–A14839, 1 juv., Langebaan. SAM–A14246, 1♂, off Cape Peninsula. SAM–A14205, 1 ♂, 4 non-ovig. ♀, 1 juv., False Bay, 57 m. SAM–A14206, 1 non-ovig. ♀, False Bay, 66 m. SAM–A14207, 1 non-ovig. ♀, False Bay, 54 m. SAM–A14209, 1 ♂, False Bay, 26–29 m. SAM–A14210, 2 non-ovig. ♀, 1 juv., False Bay, 22 m. SAM–A14211, 3 ♂, 1 sub♂, 1 ovig. ♀, 4 non-ovig. ♀, 7 juvs, False Bay 75 m. SAM–A14212, 3 non-ovig. ♀, 1 juv., False Bay, 66 m. SAM–A14213, 1 non-ovig. ♀, False Bay, 29 m. SAM–A14214, 1 non-ovig. ♀, False Bay, 36 m. SAM–A14215, 2 ♂, 1 non-ovig. ♀, False Bay, 87 m. SAM–A14216, 1 ♂, 4 non-ovig. ♀, False Bay 40 m. SAM–A14217, 2 non-ovig. ♀, 1 juv., False Bay, 17 m. SAM–A14219, 2 ♂, 1 non-ovig. ♀, False Bay, 42 m. SAM–A14221, 2 ♂, 2 ovig. ♀, 2 non-ovig. ♀, 2 juvs, False Bay, 87 m. SAM–A14222, 5 ♂, 2 sub♂, 3 ovig. ♀, 14 non-ovig. ♀, 25 juvs, False Bay, 61 m. SAM–A14224, 2 non-ovig. ♀, False Bay 33 m. SAM–A14225, 3 non-ovig. ♀, False Bay, 26 m. SAM–A14226, 1 ♂, 1 ovig. ♀, 6 non-ovig. ♀, 2 juvs, False Bay, 66 m. SAM–A14227, 1 juv., False Bay, 44 m. SAM–A14288, 1 juv., False Bay, 26 m. SAM–A14233, 1 ♂, 2 non-ovig. ♀, 6 juvs, False Bay. SAM–A14235, 1 non-ovig. ♀, False Bay, 48 m. SAM–A14237, 1 sub♂, False Bay. SAM–A14239, 1 non-ovig. ♀, False Bay, 13 m. SAM–A14240, 1♂, 1 sub♂, 1 non-ovig. ♀, 1 juv., False Bay. SAM–A14241, 1 non-ovig. ♀, False

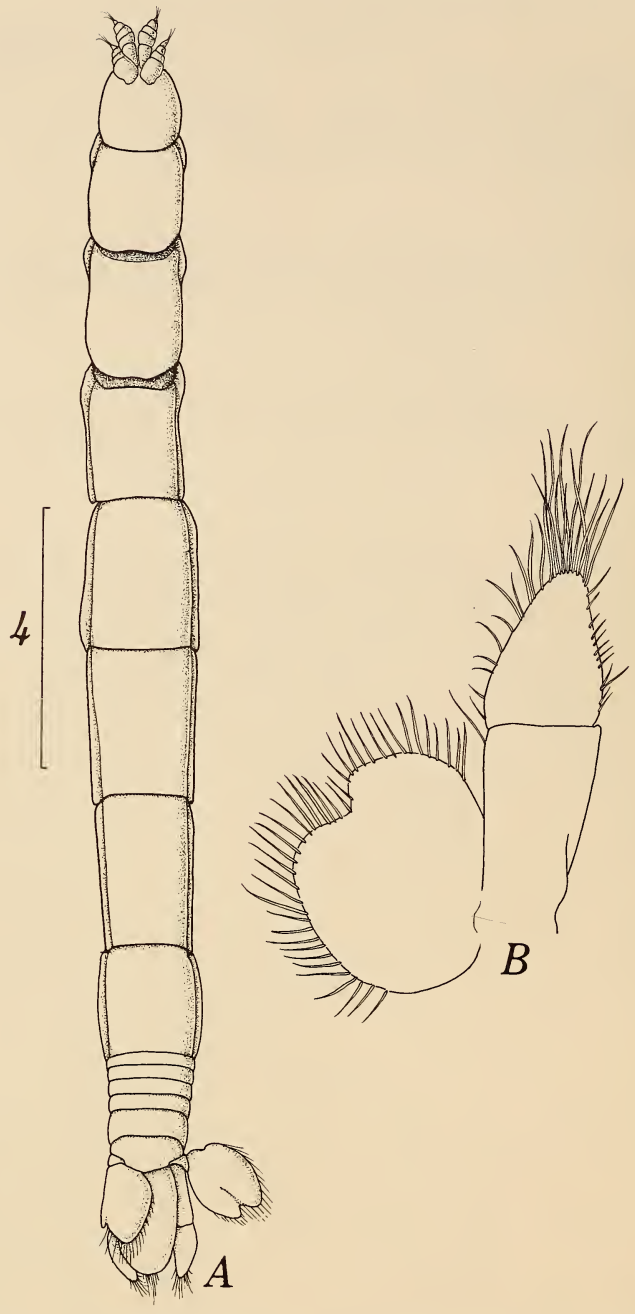

Fig. 52. *Leptanthura laevigata*. A. ♀ dorsal view. B. Uropod. Scale in mm.

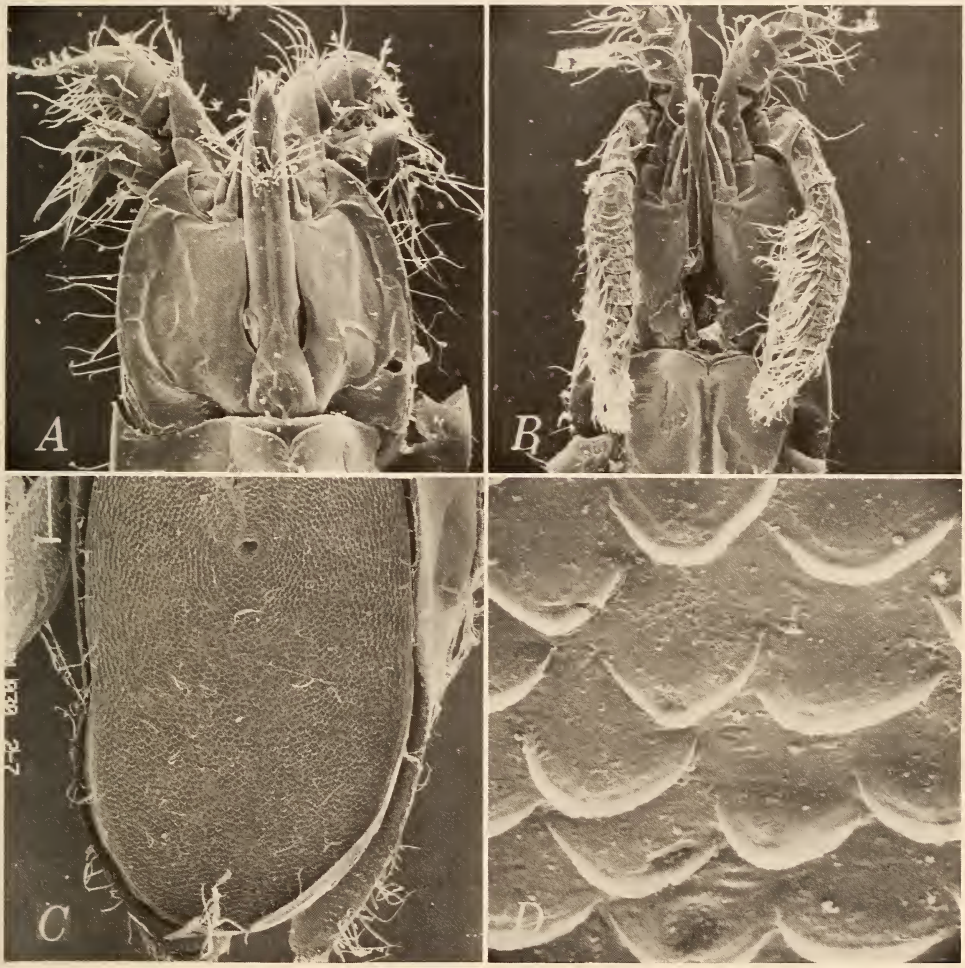

Fig. 53. *Leptanthura laevigata*. A. Cephalon ♀ ventral view. B. Cephalon ♂ ventral view. C. Telson. D. Telsonic scales enlarged.

Bay, 53 m. SAM–A14242, 2 non-ovig. ♀, False Bay, 27 m. SAM–A14243, 1 non-ovig. ♀, False Bay, 48 m. SAM–A14244, 3 non-ovig. ♀, 1 juv., False Bay, 42 m. SAM–A14245, 1 non-ovig. ♀, False Bay, 50 m. SAM–A14253, 1 ovig. ♀, False Bay, 68 m. SAM–A14254, 1 ovig. ♀, False Bay, 64 m. SAM–A14255, 1 juv., False Bay, 44 m. SAM–A14256, 1 non-ovig. ♀, False Bay. SAM–A14257, 1 non-ovig. ♀, False Bay. SAM–A14259, 1 juv., False Bay. SAM–A14260, 2 non-ovig. ♀, False Bay, 42 m. SAM–A14261, 2 ovig. ♀, 3 non-ovig. ♀, False Bay, 81 m. SAM–A14262, 2 ♂, 2 ovig. ♀, 4 non-ovig. ♀, False Bay. SAM–A14268, 1 ovig. ♀, 1 non-ovig. ♀, False Bay, 50 m.

SAM–A14269, 1 juv., False Bay. SAM–A14271, 1 sub♂, 1 ovig. ♀, False Bay. SAM–A14272, 1 ♂, 1 non-ovig. ♀, 4 juvs, False Bay. SAM–A14277, 1 ♂, 1 ovig. ♀, 4 non-ovig. ♀, False Bay, 82 m. SAM–A14279, 1 non-ovig. ♀, False Bay, 79 m. SAM–A14280, 1 ♂, False Bay, 40 m. SAM–A14283, 2 juvs, False Bay, 23 m. SAM–A14287, 2 ovig. ♀, 6 non-ovig. ♀, False Bay, 58 m. SAM–A14289, 2 non-ovig. ♀, 1 juv., False Bay, 82 m. SAM–A14290, 1 non-ovig. ♀, False Bay, 36 m. SAM–A14291, 1 sub♂, 2 ovig. ♀, 1 non-ovig. ♀, False Bay, 59 m. SAM–A14292, 1 ♂, 3 juvs, False Bay, 80 m. SAM–A14293, 3 non-ovig. ♀, False Bay, 58 m. SAM–A14295, 11 juvs, False Bay, 5 m. SAM–A14297, 1 ♂, 1 non-ovig. ♀, False Bay, 59 m. SAM–A14299, 1 ♂, 5 non-ovig. ♀, 6 juvs, False Bay, 39 m. SAM–A14300, 1 ovig. ♀, 1 non-ovig. ♀, 2 juvs, False Bay, 53 m. SAM–A14301, 1 ovig. ♀, 1 juv., False Bay, 82 m. SAM–A14302, 1 ♂, 2 non-ovig. ♀, False Bay, 53 m. SAM–A14303, 1 non-ovig. ♀, False Bay, 16 m. SAM–A14304, 1 ♂, 1 sub♂, False Bay, 44 m. SAM–A14305, 1 juv., False Bay. SAM–A14306, 1 ovig. ♀, 4 juvs, False Bay, 19 m. SAM–A14307, 1 ♂, 1 sub♂, 2 ovig. ♀, 3 non-ovig. ♀, False Bay, 82 m. SAM–A14308, 1 non-ovig. ♀, 5 juvs, False Bay, 18 m. SAM–A14309, 1 ♂, False Bay, 38 m. SAM–A14312, 2 ♂, 4 non-ovig. ♀, 2 juvs, False Bay, 87 m. SAM–A14314, 1 ♂, 3 juvs, False Bay, 56 m. SAM–A14313, 1 non-ovig. ♀. 1 juv., False Bay, 59 m. SAM–A14315, 4 non-ovig. ♀, False Bay, 38 m. SAM–A14317, 3 non-ovig. ♀, 2 juvs, False Bay, 23 m. SAM–A14318, 2 ovig. ♀, 2 non-ovig. ♀, False Bay, 58 m. SAM–A14320, 2 ♂, 1 non-ovig. ♀, 4 juvs, False Bay, 58 m. SAM–A14321, 1 ♂, 1 non-ovig. ♀, False Bay, 40 m. SAM–A14330, 1 ♂, 1 sub♂, 2 non-ovig. ♀, 3 juvs, False Bay, 40 m. SAM–A14332, 1 juv., False Bay, 38 m. SAM–A14338, 1 ♂, 2 ovig. ♀, 5 non-ovig. ♀, 1 juv., False Bay. SAM–A14340, 1 non-ovig. ♀, False Bay, 26 m. SAM–A14836, 3 juvs, False Bay. SAM–A14838, 2 ♂, 4 ovig. ♀, 6 non-ovig. ♀, 3 juvs, False Bay, 40 m. SAM–A14218, 1 ovig. ♀, 1 non-ovig. ♀, Agulhas Bank, 44 m. SAM–A14229, 1 ovig. ♀, 2 non-ovig. ♀, 1 juv., Agulhas Bank, 75 m. SAM–A14236, 2 juvs, Agulhas Bank, 84 m. SAM–A14247, 1 non-ovig. ♀, Agulhas Bank, 100 m. SAM–A14248, 1 juv., Agulhas Bank, 27 m. SAM–A14249, 1 non-ovig. ♀, Agulhas Bank, 26 m. SAM–A14251, 1 juv., Agulhas Bank, 172 m. SAM–A14252, 1 non-ovig. ♀, Agulhas Bank, 183 m. SAM–A14263, 1 ♂, 1 non-ovig. ♀, Agulhas Bank, 124 m. SAM–A14264, 1 sub♂, Agulhas Bank, 93 m. SAM–A14265, 1 non-ovig. ♀, Agulhas Bank, 97 m. SAM–A14267, 1 non-ovig. ♀, Agulhas Bank, 84 m. SAM–A14270, 1 non-ovig. ♀, Agulhas Bank, 108 m. SAM–A14274, 1 ovig. ♀, 2 non-ovig. ♀, Agulhas Bank, 106 m. SAM–A14275, 6 juvs, Agulhas Bank, 107 m. SAM–A14276, 4 non-ovig. ♀, Agulhas Bank, 183 m. SAM–A14278, 1 ovig. ♀, Agulhas Bank, 46 m. SAM–A14282, 2 non-ovig. ♀, 1 juv., Agulhas Bank, 125 m. SAM–A14288, 1 non-ovig. ♀, Agulhas Bank, 11 m. SAM–A14294 1 ♂, 1 non-ovig. ♀, 1 juv., Agulhas Bank, 44 m. SAM–A14296, 1 ovig. ♀, Agulhas Bank, 300 m. SAM–A14310, 1 non-ovig. ♀, Agulhas Bank, 44 m. SAM–A14316, 1 ovig. ♀,

1 non-ovig. ♀, Agulhas Bank, 44 m. SAM–A14837, 2 non-ovig. ♀, Mossel Bay. SAM–A14230, 1 non-ovig. ♀, off Knysna. SAM–A14200, 1 ♂, 12 non-ovig. ♀, 15 juvs, Still Bay, 20 m. SAM–A14201, 2 non-ovig. ♀, Still Bay, 80 m. SAM–A14202, 1 non-ovig. ♀, 1 juv., Still Bay, 15 m. SAM–A14203, 3 non-ovig. ♀, Still Bay, 15 m. SAM–A14204, 1 juv., Still Bay, 200 m. SAM–A14286, 3 juvs, off Port Elizabeth. SAM–A57, 2 ♂, 2 non-ovig. ♀, off East London, 86 m. SAM–A62, 1 ovig. ♀, off Keiskamma Point, 66 m. SAM–A64, 1 ovig. ♀, off Cape St. Francis, 50 m. SAM–A2745, 3 non-ovig. ♀, off East London, 104 m. SAM–A4169, 1 juv., off Cape Seal, 160 m. SAM–A5959, 2 ovig. ♀, 2 non-ovig. ♀, off Duminy Point, 174 m. SAM–A5960, 1 ovig. ♀, off Cape St. Blaize, 84 m.

Distribution

Orange River mouth to Agulhas Bank; Durban to Mozambique Channel, 42–1 360 m.

Remarks

The material recorded by Kensley (1980) from Madagascar, Mauritius, and Sumatra, although superficially similar to *L. laevigata* in uropodal and telsonic shape, tends to be ovigerous at a smaller size and lacks imbricate scales on the telson. These differences would indicate that at least one other species is involved in the western Indian Ocean.

Leptanthura minuta Kensley, 1978
Fig. 54

Leptanthura minuta Kensley, 1978*b*: 16, figs 9–10.

Diagnosis

Adult male and female less than 5,0 mm total length. Integument not indurate. Telson elliptical, posteriorly broadly rounded. Uropodal exopod broadly oval, margin crenate.

Type material

Holotype, SAM–A15654, 1 ♂, 4,6 mm. Allotype, 1 ovig. ♀, 4,5 mm. Paratypes, 1 ♂, 1 ovig. ♀, 1 non-ovig. ♀, off Natal, 27°59′S 32°40′E, 550 m. Paratypes, USNM 170545, 1 ♂, 1 ovig. ♀, 1 non-ovig. ♀, off Natal, 27°59′S 32°40′E, 550 m.

Other material

SAM–A15655, 1 ovig. ♀, off Natal, 27°31′S 32°50′E, 750 m. SAM–A15656, 2 ♂, 1 non-ovig. ♀, off Natal, 30°53′S 30°31′E, 850 m.

Distribution

Off Natal, 550–850 m.

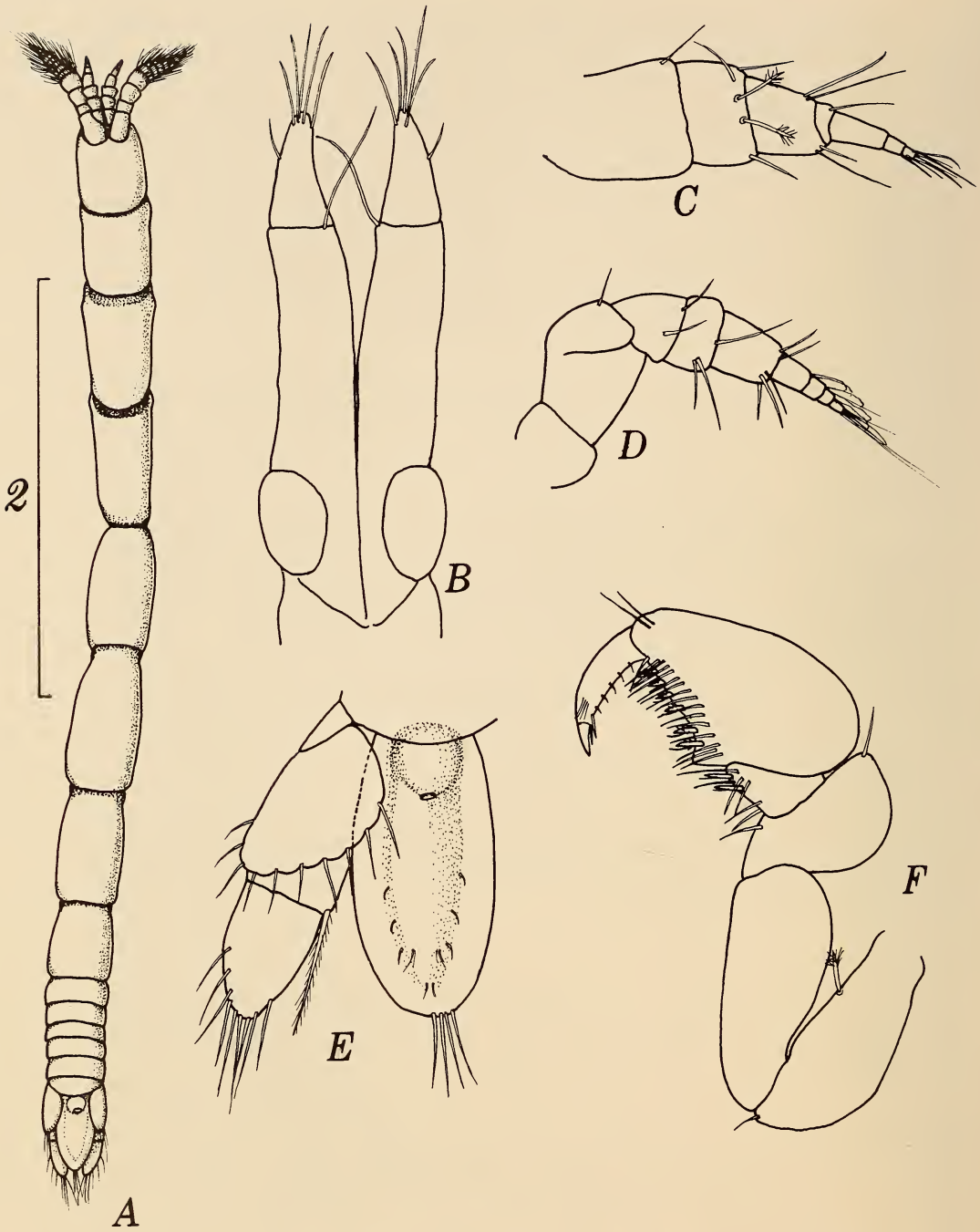

Fig. 54. *Leptanthura minuta*. A. ♂ dorsal view. B. Maxilliped. C. Antennule ♀. D. Antenna. E. Telson and uropod. F. Pereopod 1 ♂. Scale in mm.

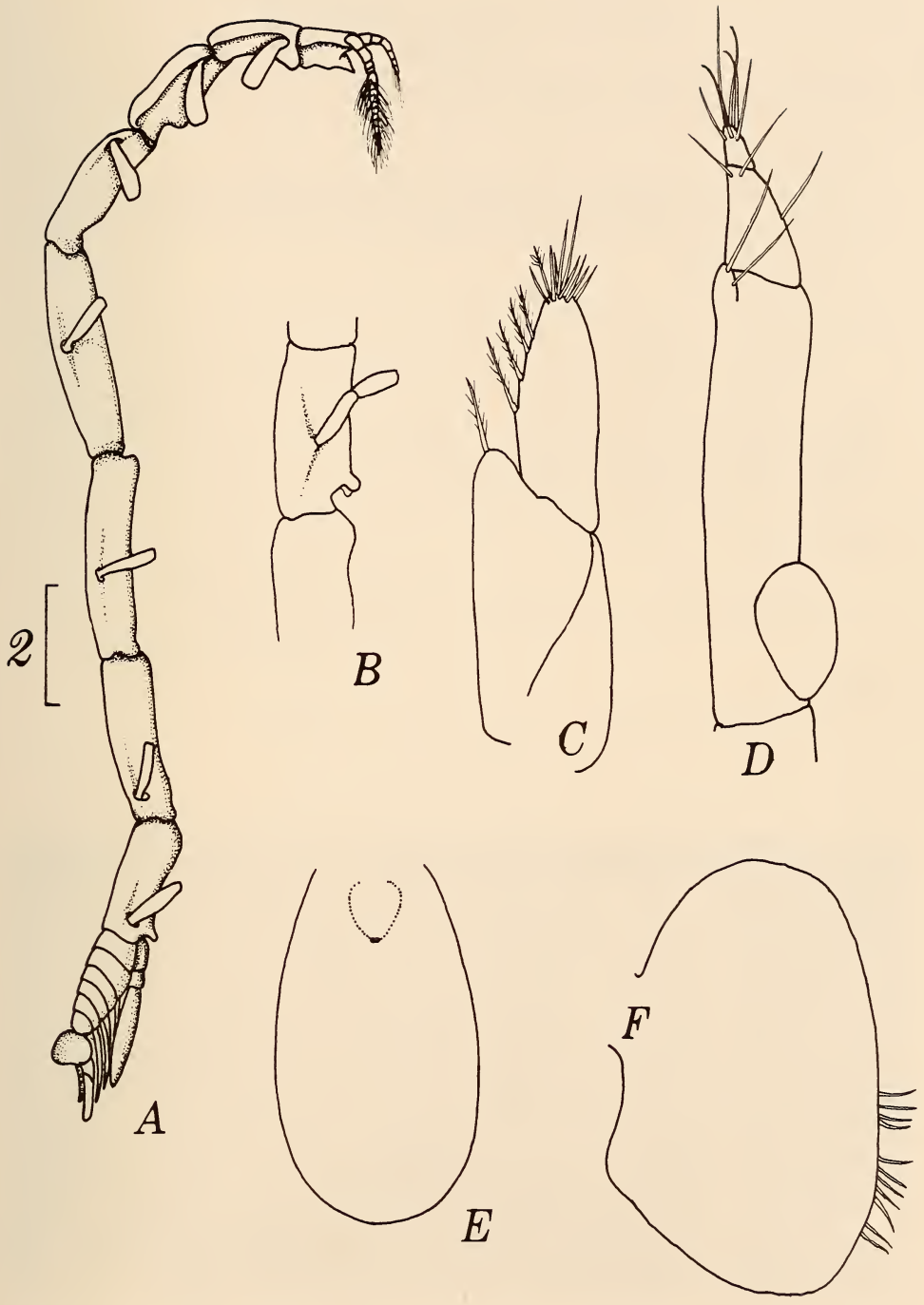

Fig. 55. *Leptanthura natalensis*. A. ♂ lateral view. B. Pereonite 5 ♂ lateral view. C. Uropodal endopod and basis. D. Maxilliped. E. Telson. F. Uropodal exopod. Scale in mm.

Leptanthura natalensis Kensley, 1978

Figs 55–56

Leptanthura natalensis Kensley, 1978*b*: 20, figs 11–12.

Diagnosis

Integument moderately indurate. Telson posteriorly evenly rounded. Uropodal exopod broadly oval-subcircular. Short posteroventral lobes present on some pereonites.

Type material

Holotype, SAM–A15657, 1 ♂, 20,6 mm, off Natal, 27°09′S 32°58′E, 800 m. Paratypes, SAM–A15658, 2 ♂, 6,7–6,8 mm, 1 juv., off Natal, 26°51′S 33°12′E, 720 m. Paratypes, SAM–A15659, 2 ♂, 6,7–7,5 mm, off Natal, 27°10′S 32°58′E, 820 m. Paratypes, USNM 170546, 1 ♂, 8,0 mm, 1 non-ovig. ♀, 5,7 mm, off Natal, 30°17′S 31°10′E, 820 m.

Other material

SAM–A15660, 1 ♂, 1 juv., off Natal, 30°33′S 30°48′E, 690 m. SAM–A15661, 7 non-ovig. ♀, off Natal, 30°53′S 30°31′E, 850 m.

Distribution

Off Natal, 690–850 m.

Fig. 56. *Leptanthura natalensis*. A. Cephalon ♂ dorsal view. B. Pereopod 1 inner surface.

Leptanthura urospinosa Kensley, 1975

Fig. 57

Leptanthura urospinosa Kensley, 1975*a*: 67, fig. 16; 1978*a*: 52, fig. 22K–L. Poore, 1980: 62.

Diagnosis

Telson parallel-sided, posterior third tapering to acute apex. Uropodal exopod broadly oval, with dentate medial margin. Maxilliped four-segmented.

Type material

Holotype, SAM–A13619, 1 non-ovig. ♀, 10,5 mm, False Bay, 26 m. Paratype, SAM–A13620, 1 non-ovig. ♀, 13,3 mm, False Bay, 5 m.

Other material

SAM–A17611, 1 ovig. ♀, 8,8 mm, 1 non-ovig. ♀, 9,6 mm, False Bay, 75 m. SAM–A17612, 3 non-ovig. ♀, 6,0–8,5 mm, False Bay, 39 m. SAM–A14341, 1 non-ovig. ♀, 8,0 mm, off Still Bay, 120 m. SAM–A14342, 1 non-ovig. ♀, 5,4 mm, off Still Bay, 200 m. SAM–A17613, 1 non-ovig. ♀, 5,2 mm, Agulhas Bank, 50 m.

Distribution

False Bay to Still Bay, 5–200 m.

Paranthura Bate & Westwood, 1868

Diagnosis

Eyes present. Pleonites more or less distinct. Antennular flagellum shorter than peduncle. Antennal flagellum of one or more articles, short, flattened. Mandibular palp three-segmented. Maxillipedal endite small to obsolete; palp of one or two articles. Pereopod 1 propodus expanded, subchelate; pereopods 2–3 smaller than 1; pereopods 4–7 with rectangular carpi, anterior margins subequal to posterior margins. Pleopod 1 exopod operculiform. Telson lacking statocyst.

Type species

Paranthura costana Bate & Westwood, 1868.

Remarks

Paranthura is probably the most speciose genus of the Paranthuridae, with many of the species being superficially very similar. Species reported to have wide geographical distributions should be viewed with suspicion; close examination and attention to fine details of tail-fan structure especially will probably reveal several restricted species masquerading under long-established names.

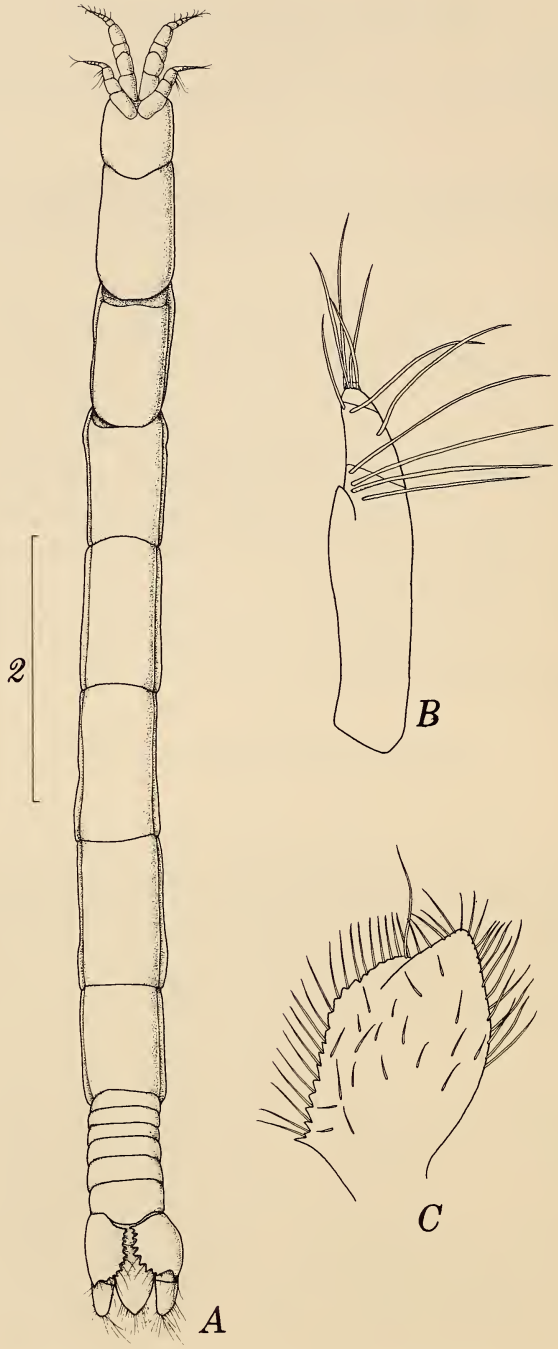

Fig. 57. *Leptanthura urospinosa*. A. ♀ dorsal view. B. Maxilliped. C. Uropodal exopod. Scale in mm.

KEY TO THE SOUTH AFRICAN SPECIES OF *PARANTHURA*

1. Telson densely setose; ischium and basis of pereopods 4–7 subcircular..... *latipes*
– Telson only sparsely setose; ischium and basis of pereopods 4–7 not expanded ... *punctata*

Paranthura latipes Barnard, 1955

Fig. 58

Paranthura latipes Barnard, 1955: 51, fig. 24d–f. Kensley, 1978*a*: 54, fig. 23H–I. Poore, 1980: 63.

Diagnosis

Telson ovate-lanceolate, bearing elongate finely plumose setae. Uropodal exopod ovate, bearing plumose setae. Pereopod 1 with basal tooth on propodal palm 'not prominent' (Barnard 1955: 51). Ischia and bases of pereopods 4–7 broad, subcircular.

Type material

Holotype, ♂, 7,5 mm, Maxixe, Inhambane Bay, Mozambique, intertidal. This specimen was not received by the South African Museum, and is apparently lost.

Distribution

Inhambane, Mozambique; intertidal.

Remarks

This species has not been recorded since the original description.

Paranthura punctata (Stimpson, 1855)

Figs 59–60

Anthura punctata Stimpson, 1855: 393. Stebbing, 1910: 419.
Paranthura punctata: Hilgendorf, 1878: 847. Barnard, 1914: 348a, pl. 29C; 1920: 343; 1925*a*: 154; 1940: 490. Nierstrasz, 1941: 252. Thomson, 1951: 2. Hurley, 1961: 283. Grindley & Kensley, 1966: 8. Kensley, 1975*a*: 39; 1978*a*: 55, fig. 23J; 1978*b*: 2. Chapman & Lewis, 1976: 162, fig. 105. Poore, 1980: 64.

Diagnosis

Antennular flagellum of four articles; antennal flagellum of one article. Mandibular palp segment 3 with comb of fourteen to sixteen fringed spines. Maxilliped with rudimentary endite, palp of single setose segment. Pereopod 1 propodus expanded. Pleon shortened, pleonites free; pleonite 6 strongly incised. Telson lanceolate, posteriorly rounded. Uropodal exopod narrowly oval-lanceolate.

Type material

Whereabouts unknown. Type locality: False Bay, '20 fathoms'.

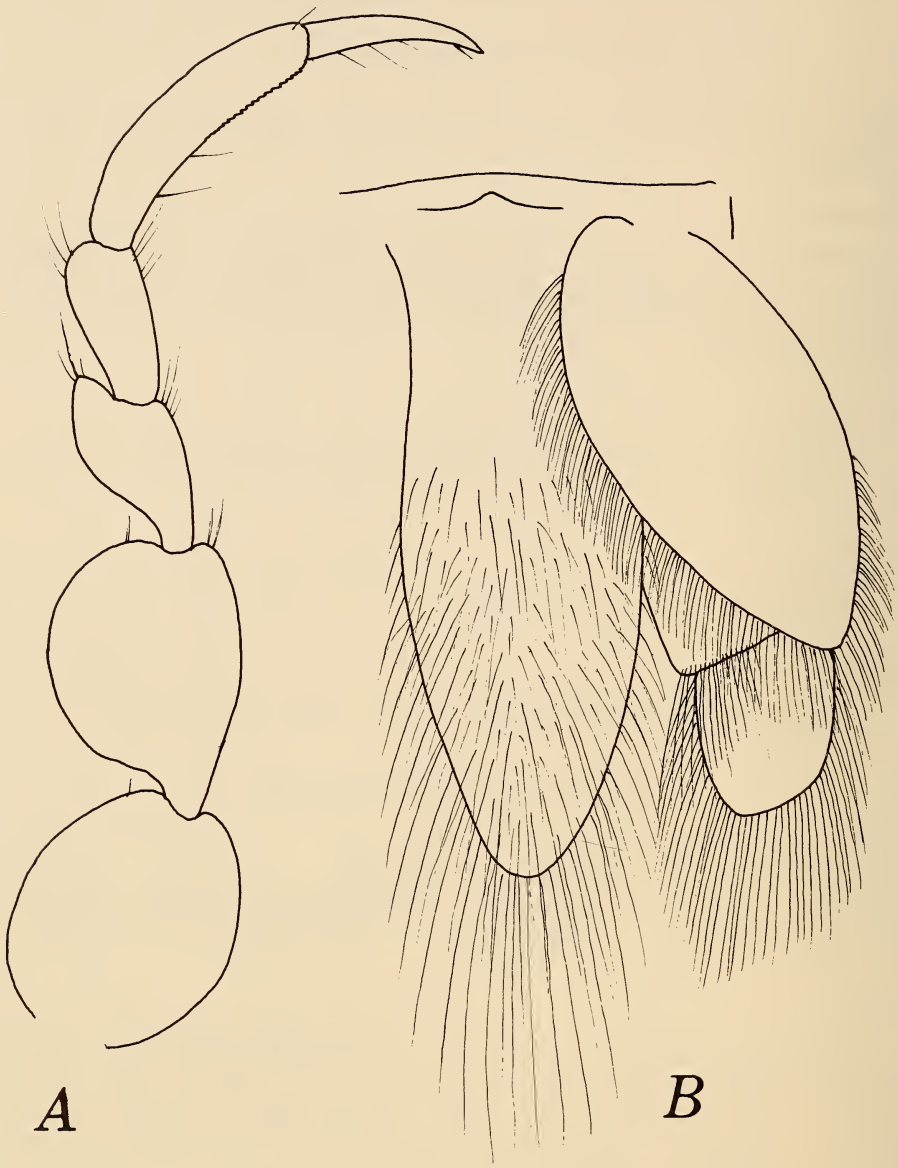

Fig. 58. *Paranthura latipes*. A. Pereopod 5. B. Uropod and telson (from Barnard 1955).

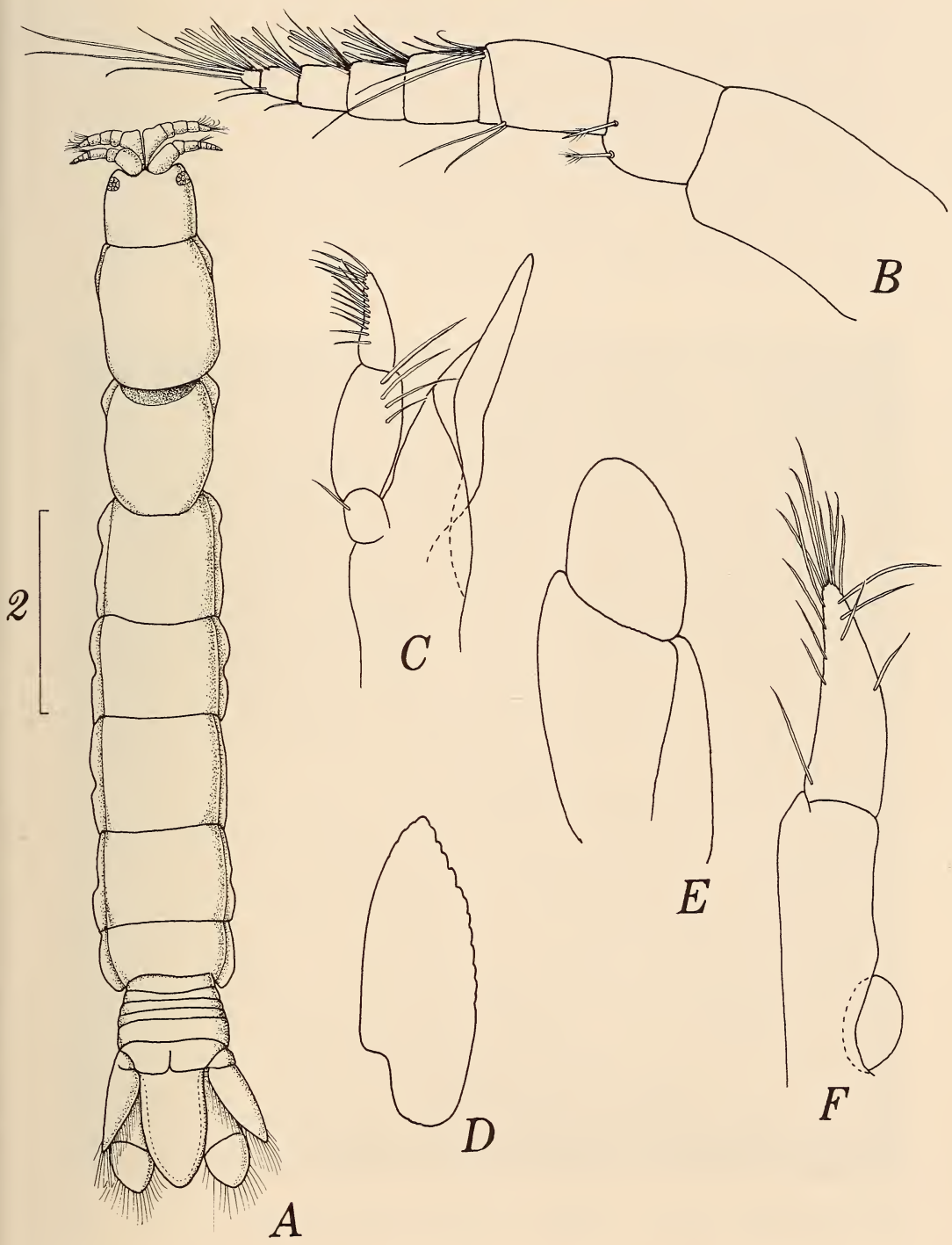

Fig. 59. *Paranthura punctata*. A. ♀ dorsal view. B. Antennule. C. Mandible. D. Uropodal exopod. E. Uropodal basis and endopod. F. Maxilliped. Scale in mm.

Other material

SAM–A12256, 1 non-ovig. ♀, 1 juv., off Orange River mouth. SAM–A14371, 1 non-ovig. ♀, off Saldanha Bay, 50–54 m. SAM–A2612, 2 non-ovig. ♀, 1 juv., Mouille Point, Table Bay. SAM–A14361, 1 non-ovig. ♀, False Bay, 44 m. SAM–A14363, 1 non-ovig. ♀, False Bay, 39 m. SAM–A14364, 8 ovig. ♀, 3 non-ovig. ♀, 14 juvs, False Bay, 42 m. SAM–A14366, 1 non-ovig. ♀, False Bay, 42 m. SAM–A14368, 1 non-ovig, ♀, False Bay, 13 m. SAM–A14369, 1 non-ovig. ♀, False Bay. SAM–A14377, 5 non-ovig. ♀, False Bay, 17 m. SAM–A14382, 1 non-ovig. ♀, 1 juv., False Bay, 40 m.

Fig. 60. *Paranthura punctata*. A. Cephalon ♀ dorsal view. B. Cephalon ♀ ventral view. C. Antennal flagellum. D. Apex of oral cone, with projecting tips of maxillae.

SAM–A14383, 1 non-ovig. ♀, False Bay, 42 m. SAM–A14384, 1 non-ovig. ♀, False Bay, 27 m. SAM–A14386, 1 ovig. ♀, 1 non-ovig. ♀, False Bay, 66 m. SAM–A14387, 2 ovig. ♀, 2 juvs, False Bay. SAM–A14388, 1 non-ovig. ♀, False Bay, 35 m. SAM–A14389, 1 juv., False Bay, 51 m. SAM–A14391, 1 juv., False Bay, 7 m. SAM–A14392, 1 non-ovig. ♀, 2 juvs, False Bay, 18 m. SAM–A14394, 2 ovig. ♀, False Bay, 19 m. SAM–A14372, 2 juvs, Still Bay, 80 m. SAM–A14396, 1 non-ovig. ♀, Still Bay, 120 m. SAM–A14365, 1 juv., Agulhas Bank, 183 m. SAM–A14367, 1 non-ovig. ♀, Agulhas Bank, 10 m. SAM–A14370, 1 juv., Agulhas Bank, 11–18 m. SAM–A14374, 1 ovig. ♀, 1 juv., Agulhas Bank, 121 m. SAM–A14375, 1 non-ovig. ♀, Agulhas Bank, 110 m. SAM–A14379, 1 ovig. ♀, 2 juvs, Agulhas Bank, 84 m. SAM–A14380, 1 juv., Agulhas Bank, 84 m. SAM–A14390, 1 ovig. ♀, Agulhas Bank, 84 m. SAM–A14393, 1 non-ovig. ♀, Agulhas Bank, 88 m. SAM–A2555, 1 non-ovig. ♀, off Umhlangakulu River, Natal, 100 m.

Distribution

Orange River mouth to Natal, 7–200 m.

Remarks

The specimens recorded from Australia (Thomson 1951) and New Zealand (Hurley 1961; Chapman & Lewis 1976) need to be re-examined, as few anthurideans have been found to have such wide distributions.

Barnard (1920) recorded a specimen of *P. punctata* being taken from a *Leuconia* sp. sponge.

Pseudanthura Richardson, 1911

Diagnosis

Eyes absent. Pereonite 7 considerably shorter than preceding segments. Pleonites and telson fused, anterior five pleonites indicated by shallow grooves, pleonite 6 indistinguishable from telson. Statocyst absent. Maxilliped four-segmented, endite present. Pereopod 1 subchelate, propodus expanded; pereopods 2–3 ambulatory; pereopods 4–7 with rectangular carpi, not underriding propodi. Pleopod 1 exopod operculiform, indurate; endopod reduced. Uropodal exopod reduced to short triangular structure; endopod and basis tending towards fusion. Brood pouch in female of four oostegites.

Type species

Pseudanthura lateralis Richardson, 1911.

KEY TO THE SOUTH AFRICAN SPECIES OF *PSEUDANTHURA*

1. Pleopod 1 endopod one-fourth length of exopod. Faint articulation between uropodal basis and endopod ..... *tenuis*
– Pleopod 1 endopod one-third length of exopod. No articulation between uropodal basis and endopod ..... *lateralis*

Pseudanthura lateralis Richardson, 1911

Figs 61–62

Pseudanthura lateralis Richardson, 1911: 7. Barnard, 1920: 343, pl. 15 (figs 13–16); 1925*a*: 157, figs ls, 3e, 5d; 1940: 490, 497. Nierstrasz, 1941: 252. Menzies, 1962: 191, fig. 70. Kensley, 1978*a*: 55, fig. 23K–L; 1978*c*: 229, figs 5–6; 1982: 42, figs 40–42. Poore, 1980: 64.

Diagnosis

Pleopod 1 endopod one-third length of exopod, triangular. No articulation between uropodal basis and endopod; exopod short, triangular.

Type material

Holotype, whereabouts unknown. Paratype, USNM 42171, 17,5 mm, off Dakar, west Africa, 930–3 200 m.

Other material

SAM–A3832, 1 ♂, 15,5 mm, 1 non-ovig. ♀, 15,6 mm, 1 ovig. ♀ (damaged) ± 16,0 mm, off Cape Point, 1 800–2 000 m. SIO station WHOI 191, 1 ♂, 16,0 mm, 2 non-ovig. ♀, off South West Africa (Namibia), 23°04′S 12°31′E, 1553 m. USNM 185042, 2 ♂, 15,4–20,4 mm, 7 non-ovig. ♀, 10 juvs, off South West Africa (Namibia), 23°01′S 12°19′E, 2136 m.

Distribution

West Africa to Cape Point, South Africa, 930–3 200 m.

Pseudanthura tenuis Kensley, 1978

Figs 63–64

Pseudanthura tenuis Kensley, 1978*a*: 224, figs 1–2; 1978*b*: 23, fig. 13. Poore, 1980: 64.

Diagnosis

Pleopod 1 endopod one-fourth length of exopod, triangular. Faint articulation between uropodal basis and endopod; exopod short, triangular. Telsonic margins straight. Male unknown.

Type material

Holotype, 1 non-ovig. ♀, SAM–A15664, 25,3 mm. Paratypes, 3 non-ovig. ♀, SAM–A15664, 6,0 17,1 23,4 mm, off Natal, 28°31′S 32°34′E, 680 m. Paratype, 1 non-ovig. ♀, SAM–A15665, 9,9 mm, off Natal, 26°51′S 33°12′E, 720 m. Paratypes, 2 non-ovig. ♀, USNM 170272, 6,0 18,9 mm, off Natal, 28°31′S 32°34′E, 680 m.

Other material

SAM–A17614, 1 juv., off Natal, 26°51′S 33°12′E, 720 m. SAM–A17615, 2 non-ovig. ♀, 14,0 18,5 mm, 3 juvs, off Natal, 30°53′S 30°31′E, 850 m.

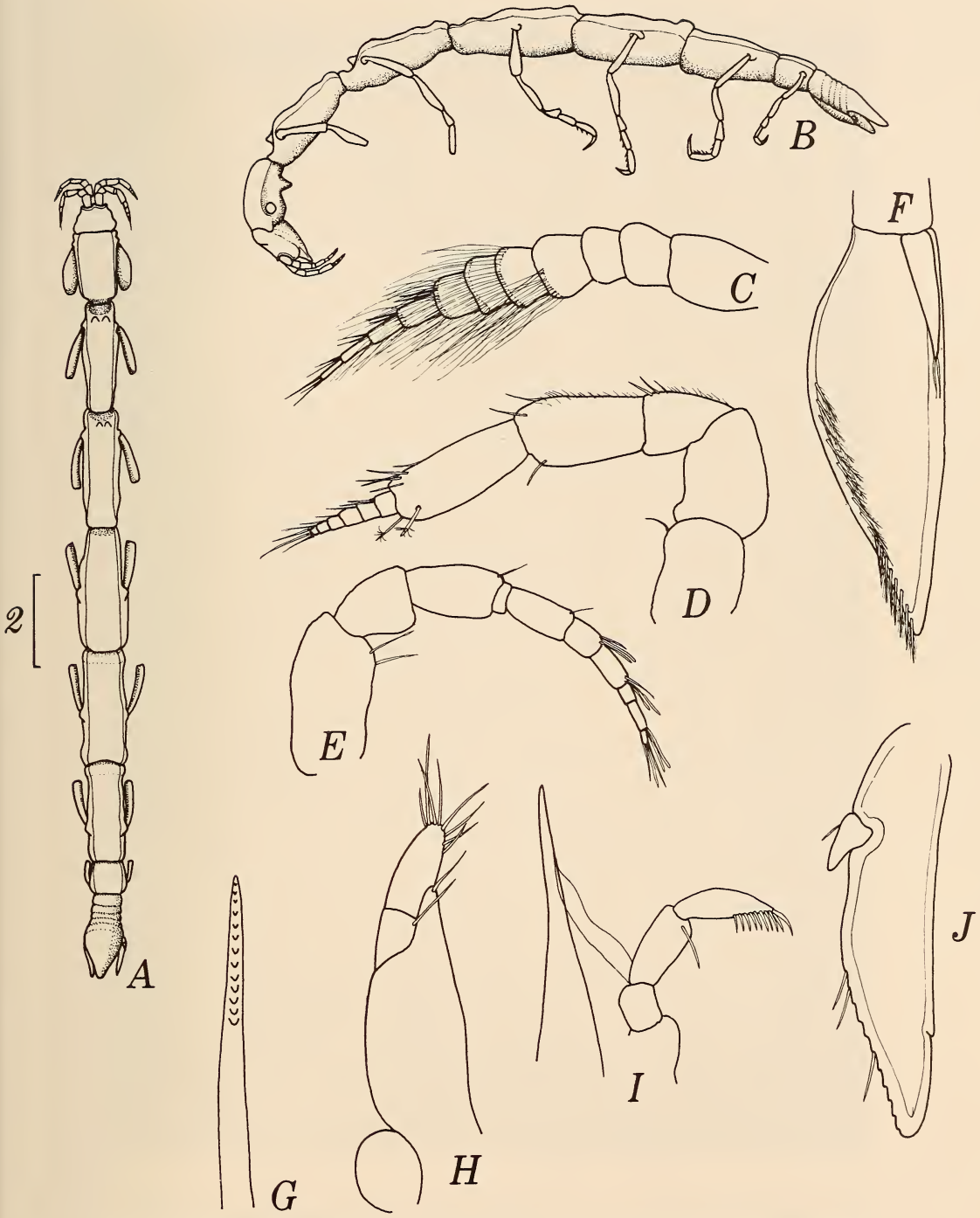

Fig. 61. *Pseudanthura lateralis*. A. ♀ dorsal view. B. ♀ lateral view. C. Antennule ♂. D. Antenna. E. Antennule ♀. F. Pleopod 1. G. Maxilla. H. Maxilliped. I. Mandible. J. Uropod. Scale in mm.

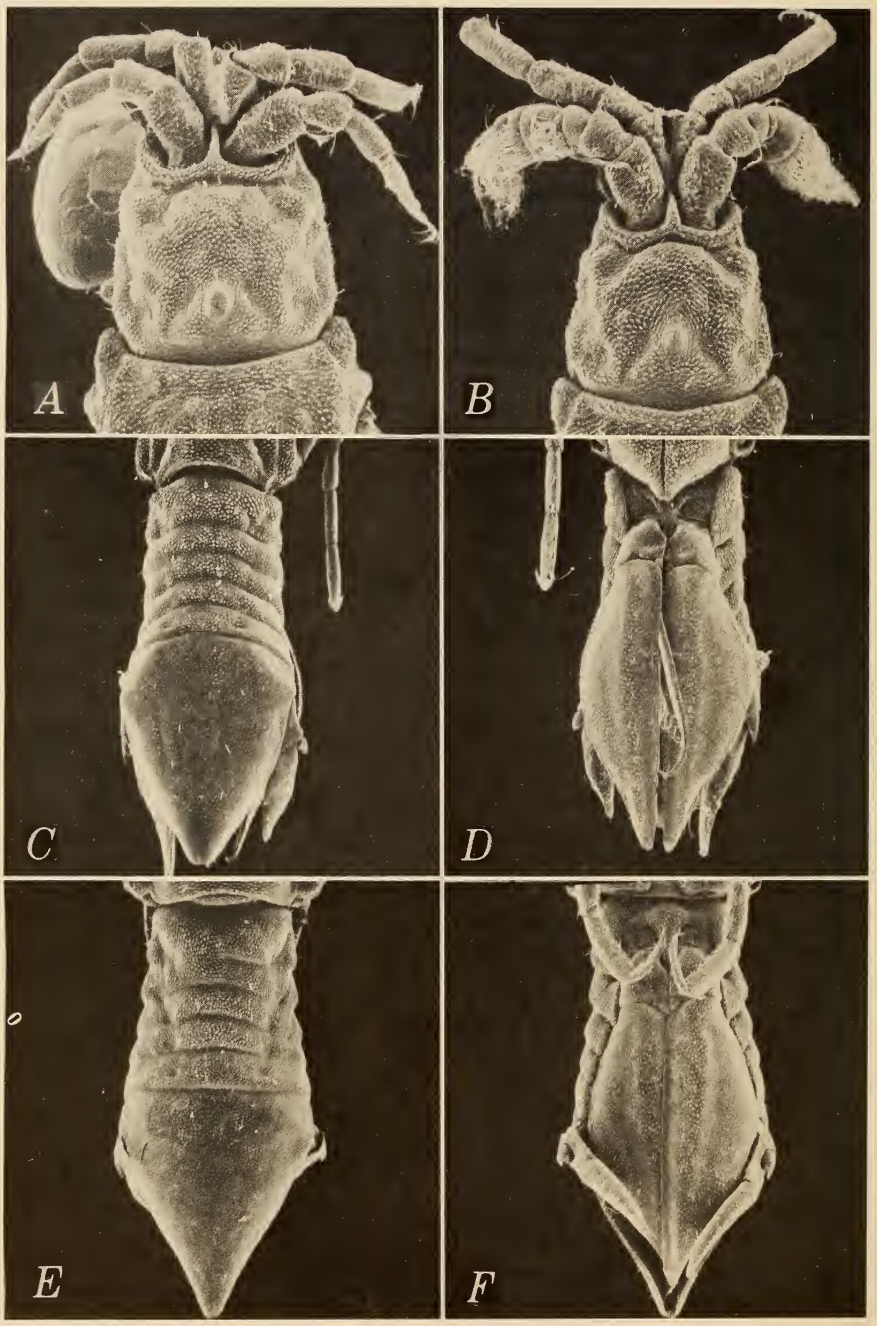

Fig. 62. *Pseudanthura lateralis*. A. ♀ cephalon dorsal view. B. ♂ cephalon dorsal view. C. ♀ pleon dorsal view. D. ♂ pleon ventral view; note copulatory stylet. E. ♀ pleon dorsal view. F. ♂ pleon ventral view.

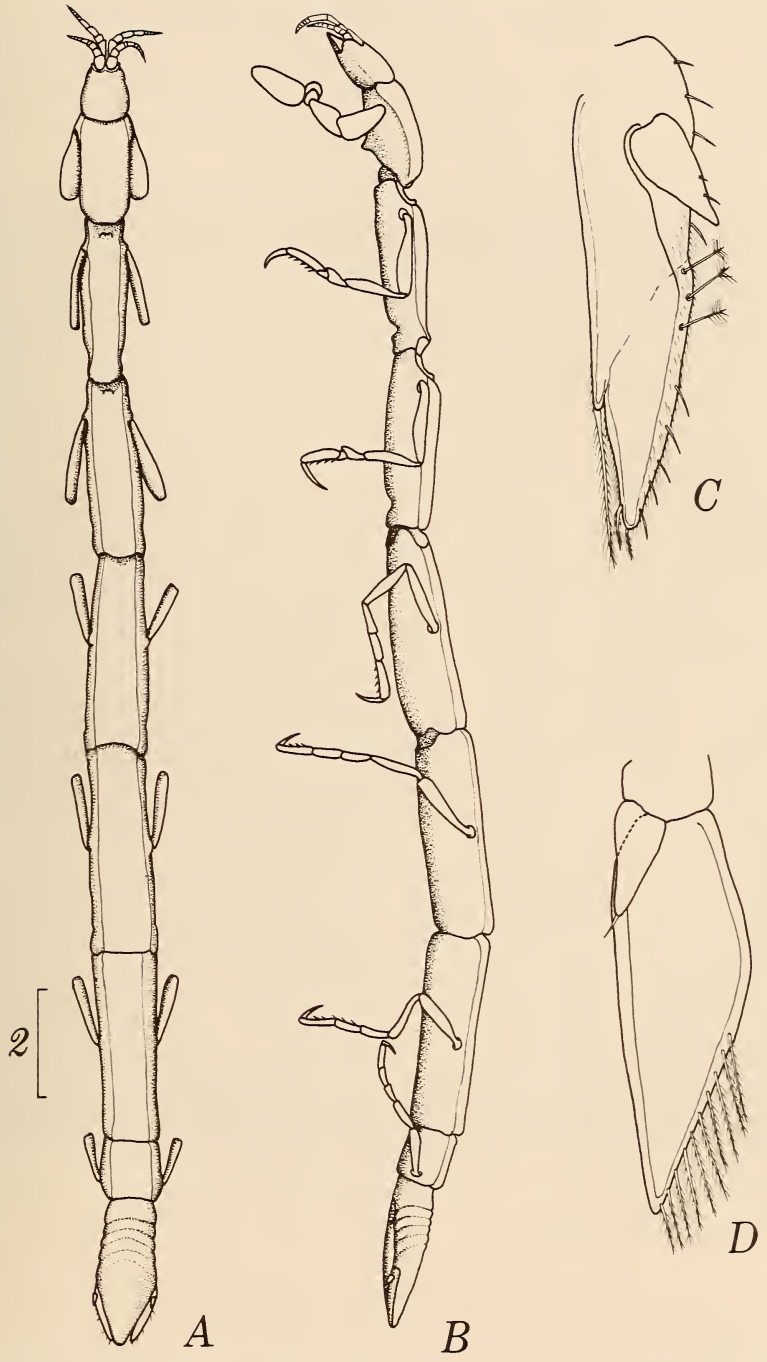

Fig. 63. *Pseudanthura tenuis*. A. ♀ dorsal view. B. ♀ lateral view. C. Uropod. D. Pleopod 1. Scale in mm.

SAM–A17616, 2 non-ovig. ♀, 14,2 mm (damaged) off Transkei, 32°14′S 29°10′E, 560–620 m.

Distribution

Northern Natal to Transkei, 560–850 m.

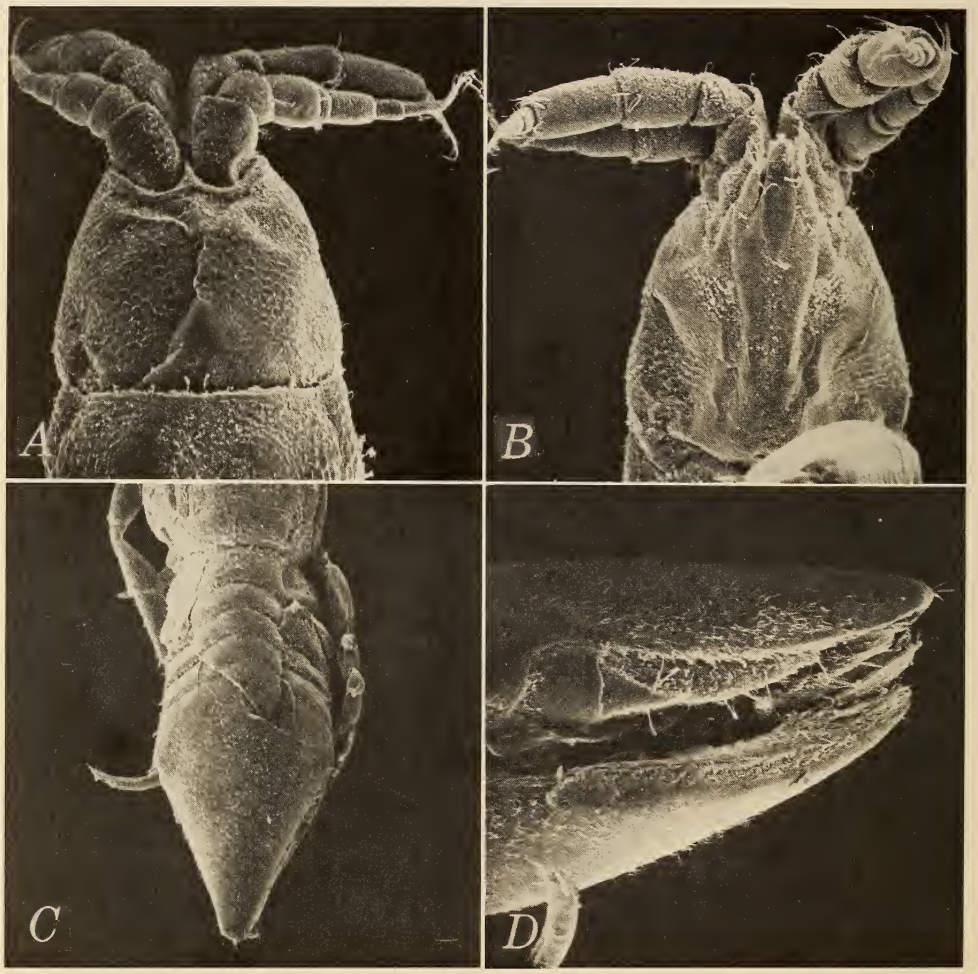

Fig. 64. *Pseudanthura tenuis*. A. ♀ cephalon dorsal view. B. ♀ cephalon ventral view. C. Pleon dorsal view. D. Pleon lateral view, uropod *in situ*.

ZOOGEOGRAPHICAL COMMENTS

In the following brief discussion, the genera and species of both the Anthuridae and Paranthuridae are dealt with as a unit. The southern African region is defined as being from the intertidal to the outer edge of the continental shelf, between the

mouth of the Kunene River on the west coast to Vilanculos in Mozambique on the east coast.

Of the 37 species here dealt with, 15 have been recorded from deeper than 200 m, while 5 of these range from considerably less than, to well beyond 200 m. Of these 15 deepwater species, only *Pseudanthura lateralis*, originally described from West Africa, has been recorded outside the region under discussion. When dealing with species occurring in deep water, little regarding geographic distribution may be deduced, such deep areas being seldom well sampled. Certainly, discussion of endemism in this context is futile. In fact, several species of deep-water Atlantic anthurideans have much wider geographical distribution than most shallow-water species (Kensley 1982).

The shallow-water forms display a distributional pattern also seen in other areas (e.g. southern Australia and the Caribbean), in which the anthurideans have received any attention, viz. very high specific, and very low generic endemism. Of the sixteen genera, only *Centranthura* (a recently created monotypic genus) is limited to the southern African region. Almost all the remaining genera have been recorded from tropical to cold-temperate regions of most of the world's oceans. Of the twenty-two shallow-water species, only *Accalathura indica* (occurring widely in the Indian Ocean) and *Panathura amstelodami* (known from the St. Paul and Amsterdam islands, northern Mozambique, and Madagascar) are not endemics.

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